TECHNOLOGY DEPT.

NOVEMBER 1, 1957

Telephone Engineer

AND MANAGEMENT

THE NATIONAL TELEPHONE MAGAZINE

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Vol 61 #21

ECONOMIC ASPECTS OF MICROWAVE, BY E. H. DANNER

USITA Conference Reports—Commercial, Accounting, Traffic

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RELIABLE ELECTRIC COMPANY

FRANKLIN PARK, ILLINOIS

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60 YEARS OF INDEPENDENT TELEPHONY 1897-1957

The West Central Telephone Association is located right in the center of what many people consider the best hunting and fishing country in Minnesota. Phillip E. Richards, manager, looks on as one of his men collects coins from one of the Alcoa® Aluminum Outdoor Telephone Booths the company maintains in Sebeka, Menahga and Verndale, Minn.

"FOUR TIMES MORE REVENUE WITH ALCOA BOOTHS,"

Reports Phillip E. Richards of West Central Telephone Association

West Central Telephone Association of Wadena, Minnesota, proved to itself that it really pays to make it more convenient for people to get to a phone. Formerly, vacationers in the resort towns of Sebeka, Menahga and Verndale, Minnesota, had to go to the local telephone office to make calls home, unless there was a phone where they were staying.

Phillip E. Richards, manager, decided to install Alcoa Outdoor Booths in these towns. When he did, revenue shot up to a figure more than four times greater than before. In the month of July, one booth brought in $245.00. Another booth made $1,831.00 its first year.

West Central likes the wide-opening doors of the booths and the internal roominess—about eight square feet of floor space. The shelf provides ample space for packages or handbags. Manager Richards found his men were able to assemble a booth and erect it on the site in about six hours.

"MAINTENANCE IS NO PROBLEM," says manager Richards. "We pay a nominal fee to the people near whose property the booth is installed to provide electricity and maintenance. The only work required is occasional sweeping out with a broom and infrequent washing with soap and water."

"THEY ARE AS STRONG AS A BRIDGE," says Phil Richards. "When I saw how these Alcoa Booths are built, with four corner columns like the box girders on a bridge, I knew they could take it. We had trouble with another booth we tried. These Alcoa Booths are really vandal resistant."

SEBEKA, MINNESOTA — 1956

Jan.	Feb.	Mar.	Apr.	May	June	
107.58	112.05	114.73	184.54	175.87	146.57	
July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
208.06	239.81	183.52	111.14	137.30	109.85	$1,831.02

MENAHGA, MINNESOTA — 1956

Jan.	Feb.	Mar.	Apr.	May	June	
93.49	81.84	65.02	94.29	122.10	165.01	
July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
245.04	190.65	156.00	142.48	133.11	73.76	$1,562.79

VERNDALE, MINNESOTA — 1956

Jan.	Feb.	Mar.	Apr.	May	June	
58.84	46.94	20.98	47.42	49.06	65.45	
July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
74.15	88.79	85.59	73.66	70.05	57.12	$738.05

1955 TOTALS — PRIOR TO INSTALLATION OF ALCOA BOOTHS

SEBEKA — $412.50 **MENAHGA — $361.70** **VERNDALE — $212.00**

"HERE'S HOW MUCH OUR BOOTHS EARN," reports Phillip E. Richards, manager, West Central Telephone Association. "Contrast the totals for the towns of Sebeka, Menahga and Verndale, Minnesota, with the totals at the bottom which show revenue obtained *before* the outdoor booths were installed."

"BOOTHS ARE BRIGHTLY LIGHTED," reports Mr. Richards. "The fluorescent lamps provide a lot of light through the four glass 'Telephone' signs at the top, and through the ceiling on the inside. This is important not only in attracting attention to the booths at night but in making the ladies feel comfortable inside."

ALCOA GOODWILL KITS are furnished with every Alcoa Booth. They contain newspaper mats, publicity releases, free envelope stuffers, radio and TV commercials.

GET MORE INFORMATION ON ALCOA BOOTHS. Write for brochure. And ask your jobber how Alcoa Booths can increase your revenue and build customer goodwill. ALUMINUM COMPANY OF AMERICA, 1691-L Alcoa Building, Pittsburgh 19, Pa.

Your Guide to the Best in Aluminum Value

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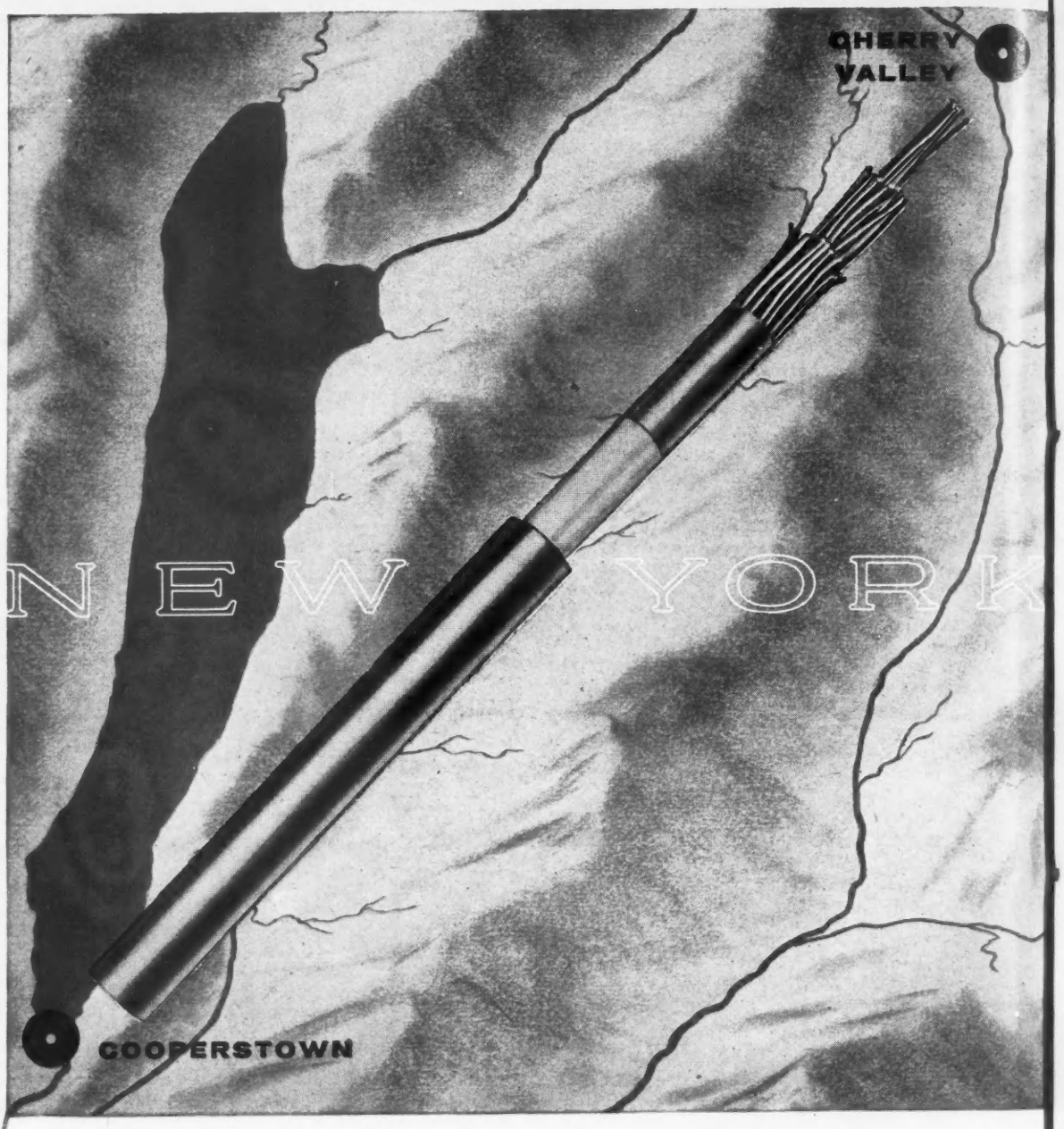

This announcement first appeared in Telephony, August 28, 1954, to mark four years of service for polyethylene-insulated telephone cable. It has been repeated every year since. It's still timely because it marks

Another year of trouble-free service! SEVEN

~~FOUR~~-YEAR HEAD START ON LOW MAINTENANCE COSTS!

In 1950, 4½ miles of this 26-pair, 19-gauge aerial cable were put into service between Cooperstown and Cherry Valley, N.Y. The object was to lower maintenance costs — *polyethylene* plastic insulated the cable's conductors and formed an integral part of the sheath.

Since then, miles of similar cable have been installed throughout the country — growing evidence of the success of this construction. The polyethylene-insulated conductors withstood 10,000 volts in factory tests, compared to 500-700 volts for paper-insulated types, so lightning hazards are minimized. Since polyethylene is moisture-resistant, the circuits can keep working even if water enters the cable through an accidental break.

BAKELITE Brand *Polyethylene is an ideal material for such wire covering applications. Its extremely light weight makes wire and cable easier to handle. It has excellent toughness, flexibility, and tensile strength. It's resistant to corrosive atmospheres, oil, grease, alkalies, and most strong acids.*

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ABOUT THIS ISSUE

THE President of the General Telephone Co. of the Southwest, E. H. Danner, discussed an important subject at the recent USITA Convention. Appearing as a principal speaker at the Engineering Conference and devoting his address to the "Engineering and Economic Aspects of Microwave Radio," Mr. Danner did a job that has needed doing for a long time. . . . Mr. Danner's remarks start on page 31 of this issue.

ACCOUNTING executives of the telephone industry held a Conference during the recent USITA Convention. They talked of many things: Recent Changes In FCC Accounting; Inflation In Business; and Mechanization of the Telephone Accounting Job. Dick Reynolds covered the meeting and his report (see page 43) made us realize that although the telephone industry is growing both physically and technologically, the industry's accounting procedures are keeping pace with developments and making helpful contributions to the growth.

STAFF writer Myrle Shafer covered the recent USITA Commercial Conference. After hearing Kenneth L. Lawson, B. C. Ames, Colonel L. D. Densmore, John S. Davies, J. P. Borden, and LaMar S. Stoops emphasize that "selling in the telephone industry is a team operation," he prepared a report on the conference (see page 36) that, we believe, proves the commercial departments of the industry are going all out to "help customers recognize their true telephone needs. . . ."

AND NOW for a bit of news. Your letters on our October 1 issue really gave our mail man a workout, and following through on hundreds of requests we have reprinted all of the articles which appeared in the October 1 issue as a booklet. We titled the booklet "Past, Present, Future" and you may order copies now. The price is $1.50. . . . Also we have two other booklets: (1) "Profits and Service Through Better Management," by James L. Morrison — all eight chapters as they appeared in Telephone Engineer & Management; and (2) "A Guide to Effective Traffic Management Methods," by Ruth E. Richards. Each book sells for $1.50. . . . Let us know how many copies you want.

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Telephone Engineer

AND MANAGEMENT

THE NATIONAL TELEPHONE MAGAZINE

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FRONT COVER

Telephone managers from Texas and Oklahoma meet with Southwestern Bell Telephone Co., representatives for Seminar on Toll Ticketing at Dallas. Reading from front to back, seated: Extreme left: George Franks, Navasota, Texas; R. E. Solomon, Valley View, Texas; Louis R. Gross, Lake Dallas, Texas; R. H. Solomon, Valley View, Texas; Luther Grimes, Dallas, Texas; Bob Elliot, Dalhart, Texas; J. T. Ricketts, Vega, Texas; C. G. Lowrey, Lancaster, Texas; Willis Lavender, Lancaster, Texas.

Center left: F. J. Micka; Mrs. Mildred Tutty, Chouteau, Oklahoma; Evan S. Raus, Chouteau, Oklahoma; Jim Young; Cecil Cale, Fort Worth, Texas; James Cole, Greenville, Texas; Dee Cole, Greenville, Texas.

Center right: Jack Haley, Austin; J. Paxton, Dallas, Texas; J. F. Blount, Dallas, Texas; J. Y. Kisinger, Dallas, Texas; C. H. Strandberg, Dallas, Texas; Ross H. Spicer, Dallas, Texas; C. W. Johnson, Dallas, Texas; Carl Price.

Exreme right: Donald Baker, San Angelo, Texas; Donald Lamb, Tyler, Texas; Rolla Johnson, Tyler, Texas; John Lamkin, Keller, Texas; Geraldine Gibson, San Marcos, Texas; B. Simmon, Jr., West Columbia, Texas; Marion Clay, Lufkin, Texas.

At speakers table: Standing, top center (l. to r.) W. J. Riley, J. D. Confeld, E. L. Gear, R. F. Fairly. Absent at time of photo: H. Y. Price, San Marcos, Texas; W. E. Lyon, Killeen, Texas; F. Bearden, Baird, Texas.

Volume 61, No. 21. Published on the 1st and 15th of each month by TELEPHONE ENGINEER PUBLISHING CORP. Office of Publication, Rochelle, Ill. Executive and Editorial Office, 7720 Sheridan Road, Chicago 26, Ill. Telephone — Rogers Park 4-3040. Subscriptions: U. S. and Possessions, $4.00 per year; Canada $4.50; in all other countries, $6.50. Single copies, U.S.A., 50 cents. Entered as Second Class matter at the post office at Rochelle, Ill. under the act of March 3, 1879.

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If we put a midget operator

in the control box –

If you put a midget operator in the control box of your key system you might be able to match the service you get from your K1A1 system. But you would have a busy midget. Here are a few of the things she would have to do, and do efficiently and tirelessly.

She would have to handle up to 4 incoming lines. The K1A1 selects as many as 4 central office or PBX lines.

She would have to give intercommunication service. The K1A1 permits you to select any one of eight other key phones simply by dialing one digit.

She would have to hold calls. With the K1A1 you can hold one call while talking on another line. This permits every key telephone user complete operational control.

She would have to flash the illuminated buttons. With the K1A1, buttons flash on incoming calls and burn steadily when the handset is lifted . . . this prevents accidental interference by other users.

These are the features your subscribers get with the compact and easily operated K1A1 system. No wonder the 1A1 type system is the fastest selling key system in the country. You will find that the K1A1 is a truly profitable revenue producer. It is easy to install and it requires practically no maintenance.

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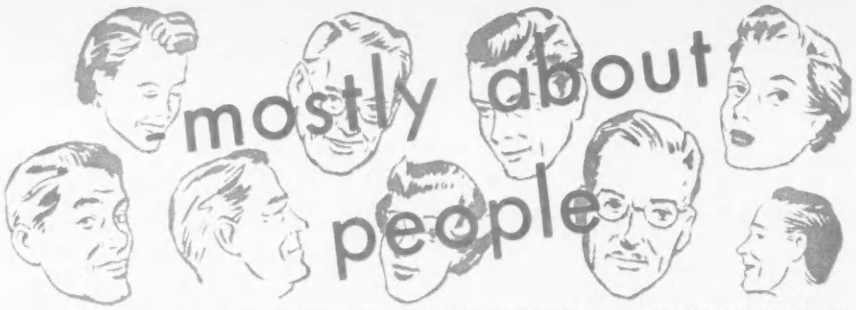

ACROSS THE EDITOR'S DESK

"A Record Breaker"

THE UNITED States Independent Telephone Association convention last fortnight was a record breaker in many respects. Over 3300 attendance is a new record. Many different nationalities were represented. The convention had a more business-like air than in past years. A total of 32 papers were delivered during the meeting and this does not count Committee reports.

New Northlake Plant

ON OCTOBER 17 the new Automatic Electric Company plant and offices at Northlake, Ill. was formerly dedicated. Many conventioneers remained in Chicago after the USITA convention to attend the ceremonies. *Herbert F. Lello*, president of Automatic, welcomed the visitors.

Seated facing the entrance of the beautiful new offices and factory, guests heard the *Hon. George P. Perrine*, Chairman of the Illinois Commerce Commission; *Leslie H. Warner*, executive vice president — manufacturing, General Telephone Corporation, and *Donald C. Power*, president of General Telephone Corp., dedicate the factory.

It is the second largest entirely covered manufacturing facility in the Mid-West. Football-minded *Don Power* brought its size more into focus for laymen by comparing it to 35 full-sized football fields. The visitors were guests of Automatic for luncheon.

"Rain Check"

WE REGRET we did not have the chance to join the Florida delegation for their breakfast on the morning of October 15 at the Conrad Hilton. We have enjoyed this privilege several times in past years. The Texas delegation held their breakfast at the same time. Since ties of this writer's birthright are of Texas origin we naturally met with the latter group on the occasion of their first official group meeting at a USITA meeting. *Jack Haley*, Texas association secretary was the m. c.

"Busy Weekend"

HERE AT our offices our hats are off to our Managing Editor *John G. Reynolds* and his son *Dick Reynolds*, our Production Manager, who handled details of our Convention Report Number that was mailed on October 21, the Monday following the national convention.

John and Dick weekended with our printers and engravers and made sure the convention report was mailed to you while it was news. To do this we held up the October 15 issue for less than one week. We held the paper presented by *Elmer H. Danner*, San Angelo, Texas, president of General Tel. of the Southwest for this issue as we wanted to present his complete paper. Also in this issue you will read the reports of the Commercial, Accounting and Traffic Conferences.

"Congratulations, USITA"

CLYDE S. BAILEY, executive vice-president of USITA, and his Washington Staff received many congratulatory words on their handling of the 60th Anniversary convention. We add our sincere thanks to the association staff and to Clyde for making our reporting job easier.

Visitor from Bermuda

ONE OF THE visitors to our rooms during the national convention was very busy attending sessions and checking every exhibit on the 5th and 6th floors. We speak of *Leslie B. Harmer*, Chief Engineer of the Bermuda Telephone Company, Ltd. Mr. Harmer also joined this writer at the Automatic Electric dedication. His interest was shared by a delegation from Venezuela and Italy who also called upon us to meet our Staff.

New Record

THE RECORD number of exhibitors (larger than ever before) filled the 5th & 6th floors of the Hilton Hotel and they have reported more interest and visitors than ever before. A number of new exhibitors showed their products this year and were well pleased with the attendance. One of the exhibitors, *Communications Equipment & Engineering Co.*, Chicago, very kindly donated a portion of their space to *Carl Daubendiek* of the Jefferson (Ia.) Telephone Co. to show the movie made by this progressive company in 1957.

New Booklets For You

FOLLOWING through on the requests of hundreds of readers our Educational Division has two new booklets we believe you will want to own. They are: —

(1) "*Past, Present and Future*" — a beautiful. 40-page booklet which tells the story of the Independent telephone industry's growth and progress. This is a booklet old timers should enjoy and industry newcomers should read.

(2) "*Profits and Service Through Better Management,*" by James L. Morrison. This 36-page booklet considers management in its broadest sense as including all persons with supervisory responsibilities. The material is applicable to company owners, directors, officers, managers, chief operators, plant foremen, and is written with one purpose — to suggest how the management of any company can be improved through the application of sound techniques.

Each booklet sells for $1.50 each. In quantities of 10 or more the price is $1.00.

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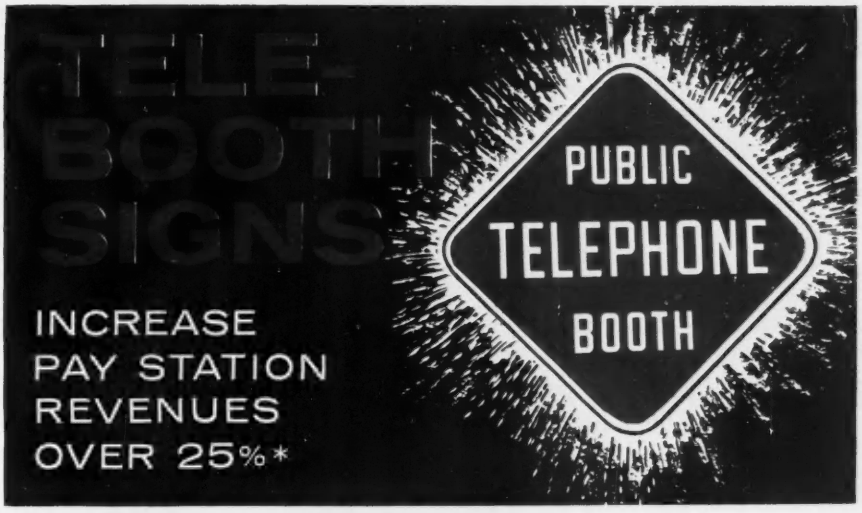

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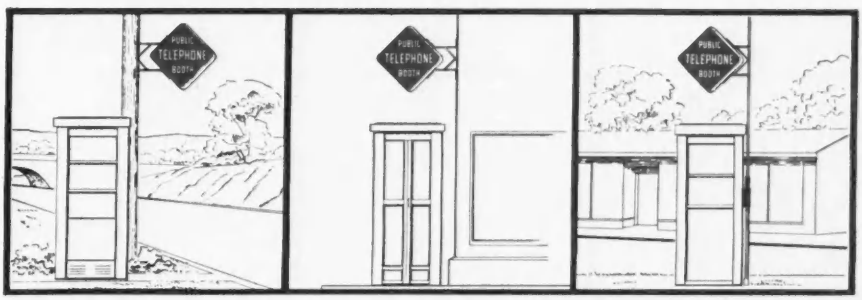
Heavy gauge galvanized brackets, welded to a reinforced frame permits solid mounting by clamp to standard utility service entrance mast or adjustable lag-screw mounting to wooden pole or adjacent building.

The Tele-Booth Sign is manufactured to exacting standards by Ad-Pact Corporation, suppliers of outdoor signs for RCA, Socony-Mobil, Miller Brewing, Maytag, Swift and other industry leaders. Ask your local distributor, who has full details on this sign, to order in any quantity from Ad-Pact Corporation.

"PROVE-IT-YOURSELF-PLAN":

Want to field test Tele-Booth Sign profit possibilities in your own territory, without obligation? Call or write Jim Signorile, Ad-Pact Corporation, Dept. AP, 271 Madison Ave., New York 16, ORegon 9-1060.

*** Actual Tele-Booth Sign installations have shown increased revenue of 25% or more per booth.**



SPECIFICATIONS:

SIZE: 2' High 2' Wide 5½" Deep

CONSTRUCTION: Formed aluminum case, insect proof, vented, access section for lamp replacement. Plexiglas sign face (two sides) all lettering and color permanently applied inside.

ILLUMINATION: Interior, four 58-watt incandescent lamps. Available with or without flasher. Fluorescent illumination in slightly larger size sign available. Optional, extra.

PACKING: Individually packed in carrier-approved carton, complete with hanging bracket and lamps. Shipping weight, 25 pounds.

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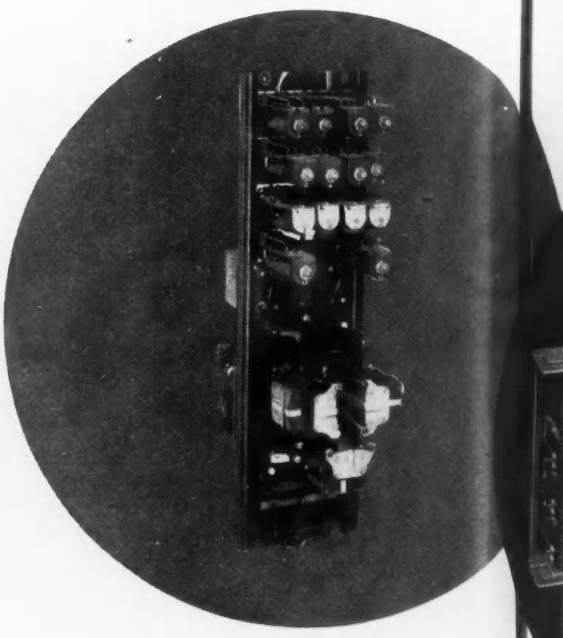
past performance points to future



7

re progress

NORTH salutes the USITA on 60 years of leadership.

The Independent Telephone Companies of America have attained, through this leadership, new stature in the American scene.

Continued progress is assured by the confidence expressed by the entire Telephone Industry in the future.

Great strides have been made in the past — from this switch of yesteryear to the modern North By-Path Crossbar switch.

Perhaps most dramatic of all new developments has been the introduction of the Ericofon, doubly dramatic when we compare it with the phone that was "modern" when the USITA was in its infancy.

North is proud of its part in the past — proud of the part North will play in this even greater future.

NORTH ELECTRIC COMPANY

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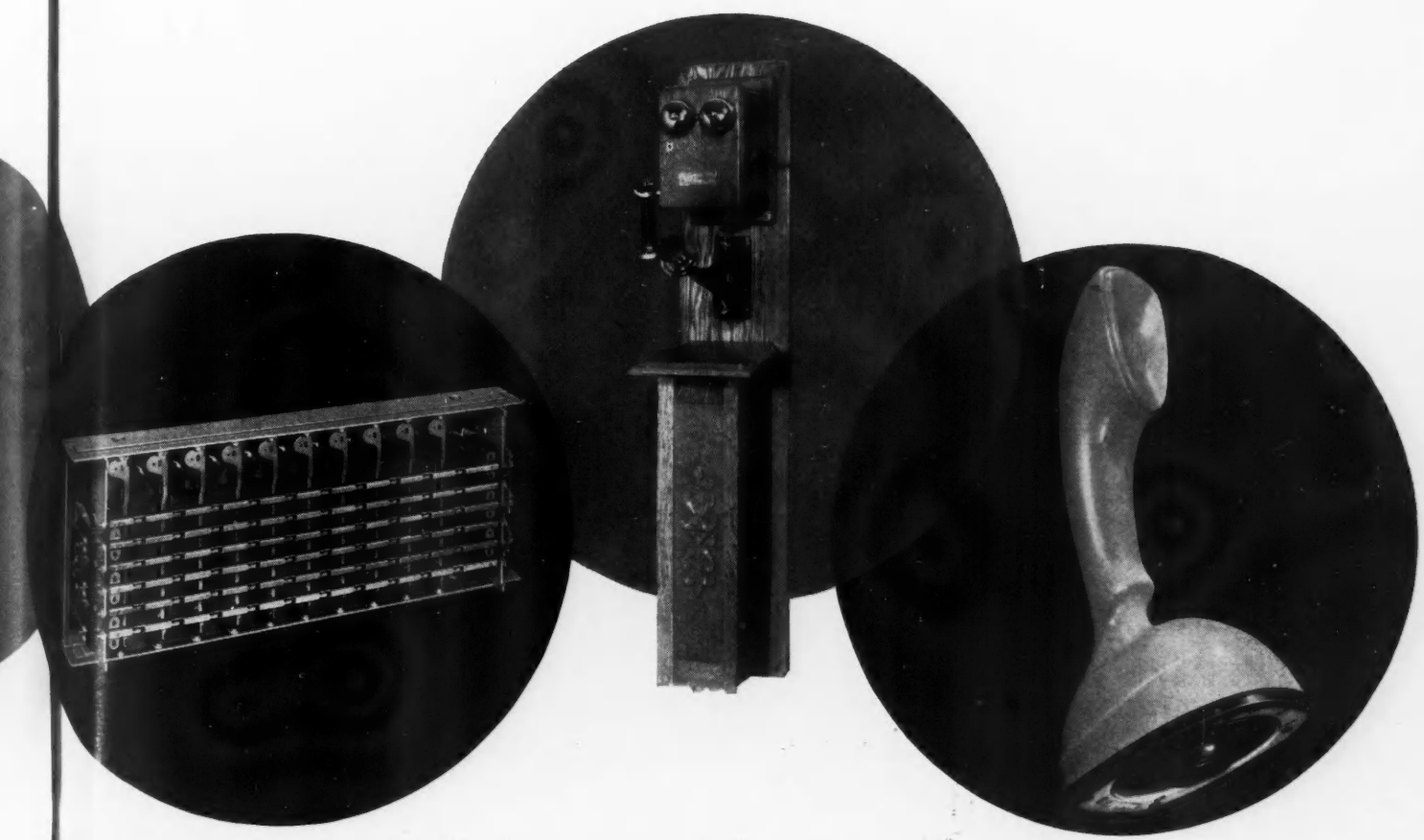
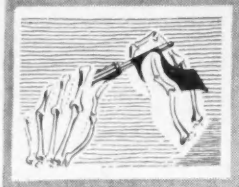


BE MODERN



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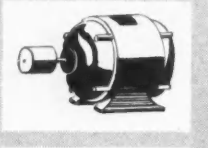
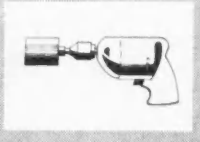
Only $9.05 f.o.b. Topeka

The "Long" plug polisher does an excellent job of polishing in just seconds.

Fits electric motor with ½" shaft or can be used with either ¼" or ½" electric drill.





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CABLE SPINNING EQUIPMENT CO.

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COMING CONVENTIONS

SOUTH CAROLINA Independent Telephone Association, Clemson House, Clemson, Nov. 4-5.

ALABAMA-MISSISSIPPI Telephone Association, Thomas Jefferson Hotel, Birmingham, Nov. 11-12.

GEORGIA Telephone Association, General Oglethorpe Hotel near Savannah, Georgia, Nov. 13-14.

CHICAGO Acoustical & Audio Group (November Meeting), Loyola University, School of Medicine, Lecture Room A, 706 S. Wolcott, Chicago 12, Ill.

SOUTH DAKOTA Telephone Association, Cataract Hotel, Sioux Falls, S. D., Nov. 21, 22, 1957.

OKLAHOMA Telephone Association, Huckins Hotel, Oklahoma City, Nov. 21-22.

FLORDIA Telephone Association, The Balmoral, Bal Harbour, Miami Beach. Dec. 2-3.

LOUISIANA Telephone Association, Jung Hotel, New Orleans, Feb. 12-13, 1958.

MINNESOTA Telephone Association, St. Paul Hotel, St. Paul, Feb. 17-19, 1958.

TEXAS Telephone Association, Baker Hotel, Dallas, March 3-4, 1958.

KENTUCKY Telephone Association, Phoenix Hotel, Lexington, March 4, 1958.

IOWA Independent Telephone Association, Hotel Fort Des Moines, Des Moines, April 8-9, 1958.

OHIO Independent Telephone Association, Deshler Hilton Hotel, Columbus, April 14-16, 1958.

NEBRASKA Telephone Association, Paxton Hotel, Omaha, April 22-23, 1958.

INDIANA Telephone Association, Claypool Hotel, Indianapolis, May 7-8, 1958.

WISCONSIN State Telephone Association, Hotel and location to be announced. May 14-15, 1958.

ILLINOIS Telephone Association, Hotel Pere Marquette, Peoria, May 21-22, 1958.

MISSOURI-KANSAS Telephone Association, Town House, Kansas City, Kans., May 26-27, 1958.

PENNSYLVANIA Independent Telephone Association, Bedford Springs Hotel, Bedford, May 26-28, 1958.

CALIFORNIA Independent Telephone Association, Sheraton-Palace Hotel, San Francisco, June 4, 5, 6, 1958.

NEW YORK Telephone Association, Scaroon Manor, Schroon Lake, June 16-18, 1958.

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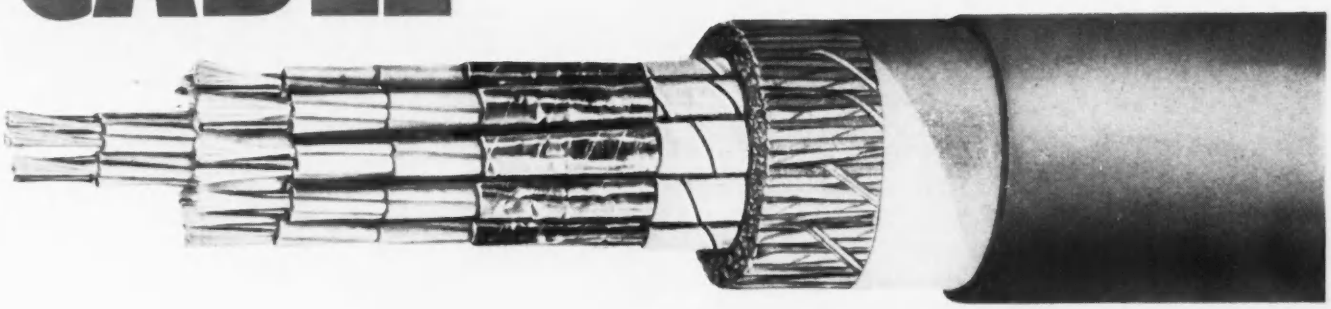

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1. Simplicity of design insures minimum maintenance. Strowger Automatic equipment operates on a step-by-step principle and is designed with the simplest possible construction. This keeps adjustments and repairs to a minimum. The position of the switching components permits visual tracing of circuit operation. This speeds your initial training of personnel and makes trouble-shooting quick and easy.

2. Backed by 65 years of engineering know-how. Strowger Automatic is the only switching equipment in the world which is backed by 65 years of systems engineering, documented experience and continuous performance in all types of telephone exchanges. Your A.E. representative refers to this vast store-house of knowledge when analyzing your problems.

3. Quality construction gives you dependable service. You must see a Strowger installation to appreciate the craftsmanship of this precision-engineered equipment. Each part is made of the finest quality materials and assembled by skilled workers for long wear and dependable service.

4. Flexible design adaptable to your future needs. Strowger Automatic equipment is assembled in small, self-contained units. The number of units can be easily increased or decreased to meet your traffic changes. Whatever your demands, the simple circuits and unitized construction of Strowger Automatic equipment meets them simply and economically.

5. Meets the challenge of progress. For 65 years Strowger Automatic has proven its flexibility by meeting every new requirement of changing conditions without obsolescence.

Prove it for yourself! Visit a Strowger Automatic exchange. See the simplicity and flexibility of design...See the craftsmanship and quality of construction. Then get in touch with us. We'll be glad to help you in any way possible. Write *Automatic Electric Sales Corporation, Northlake, Illinois. Or call Fillmore 5-7111.*

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A member of the General Telephone System—One of America's great communications systems

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Conductors insulated with high molecular weight polyethylene and jacketed with color coded, weather resistant vinyl provide good transmission values at low cost. Available in either #19 or #22 AWG with 3, 6, 11, or 16 pairs cabled over a high molecular weight polyethylene insulated high strength galvanized support wire.

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The rugged weather resistant vinyl insulation over the conductors is fully color coded. This construction, designed for block distribution, serves best where low cost rather than low attenuation is the prime consideration. Available in #24 AWG with 6, 11, or 16 pairs.

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Solid, soft drawn bare copper conductors fully color coded with heat resistant polyvinylchloride insulation. All pairs twisted with varying lays to minimize cross talk and cabled to insure maximum flexibility. A tough, water resistant vinyl jacket in either brown or ivory provides good conductor protection for exposed insulation. Rip cord construction prevents damage to conductors in stripping. Available in #24 AWG with 6, 12, 16, 21, 26, 51 or 76 pairs.

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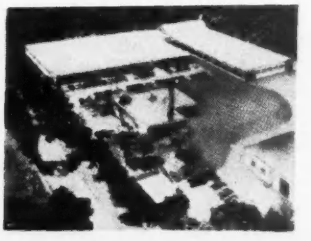
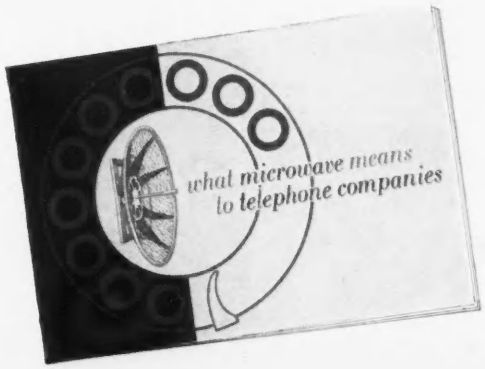


Just published . . . more helpful information about **MICROWAVE**

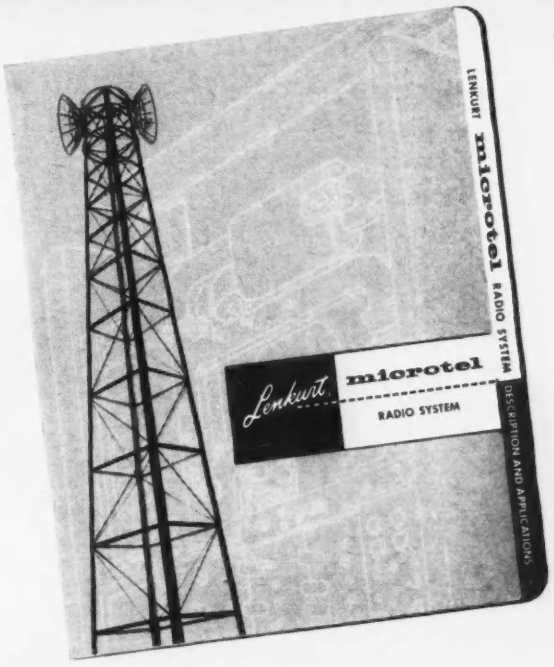
What microwave means to telephone companies

This illustrated booklet explains how telephone companies can obtain additional toll circuits at low cost with microwave. Explains that microwave can be installed quickly, at low cost . . . that it's easy to maintain, simple to expand, solves difficult terrain problems and can withstand severe weather conditions. *Write for booklet 0-946.*



microtel fact file

Plain facts about Type 74A MICROTEL—the new Lenkurt 6,000 MC microwave equipment designed for high frequency transmission of telephone, telegraph, teletype, telemetering, facsimile, supervisory and remote control information. A basic MICROTEL terminal will fill the needs for only a few circuits, or for a high density network requiring as many as 240 channels. *Write for file A1-274.*



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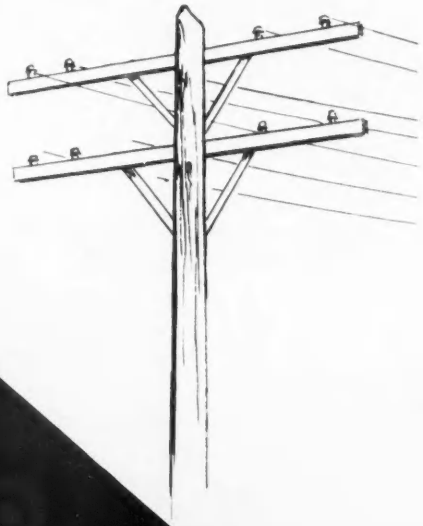
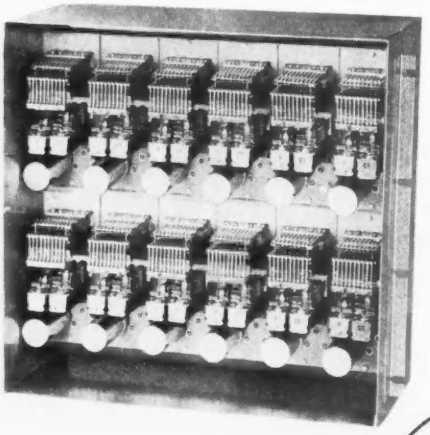
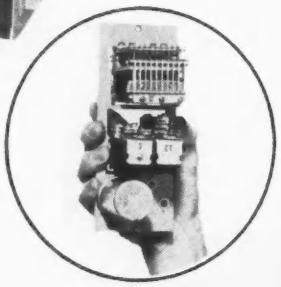
GENERAL TELEPHONE SYSTEM

For *Modern* Party Line Operation →



Typical relay case
for Ringing Converter





Relative size of
unit assembly of
Ringing Converter

The UNIVERSAL
Code-to-Selective Ringing
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simple circuits with the
magnetic impulse counter,
together with other
standard relay apparatus
of recognized
manufacture.

Other UNIVERSAL Telephone Equipment:
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MODERN SERVICE DEMANDS SELECTIVE RINGING

Selective ringing has become a "must" to maintain customer relations, but the cost of modification of earlier dial units to full selective ringing is often excessive . . . in material, engineering and especially for the installation. The UNIVERSAL Code-to-Selective Ringing Converter unit is a simple applique circuit which places the majority of the wiring modification on a factory basis, thus reducing the installation time to a minimum. Most installations can be performed by maintenance personnel. Your company will benefit from increased revenue that can be expected with selective ringing because of increased station rates and increased party line fill.

*Pat. Pend.

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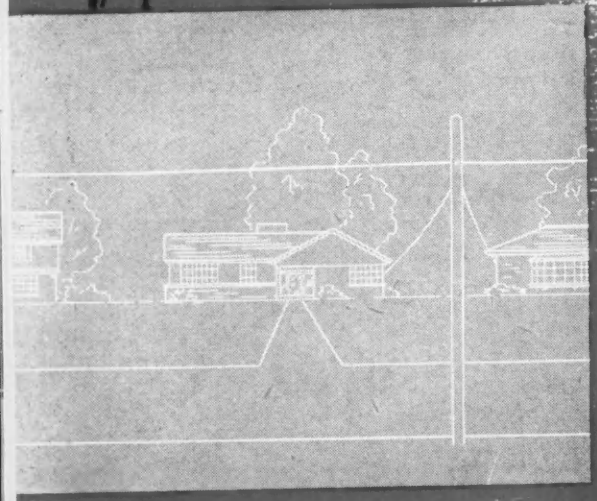

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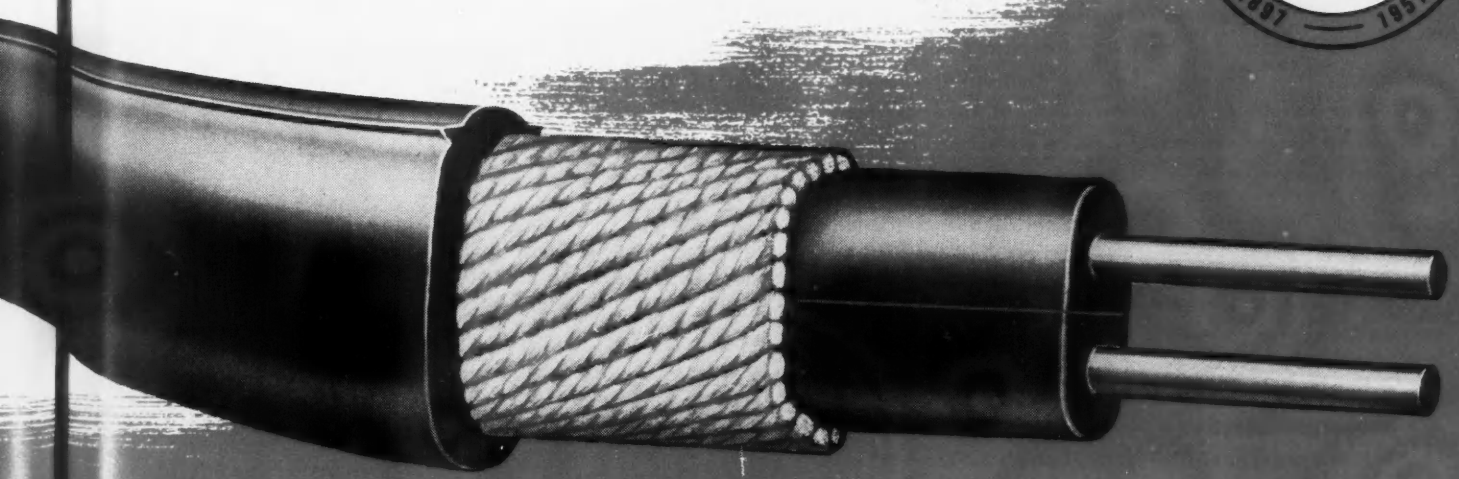
drop wire...

After more than ten years in test installations WB TELEPRENE Drop Wire shows no appreciable deterioration . . . it is still providing good-as-new service. Before WB introduced neoprene jacketed TELEPRENE the *average* life of drop wire was only seven years . . . up to now no "average" has been established for TELEPRENE.

Independent Telephone Companies have saved hundreds of thousands of dollars by using extra-long-lasting neoprene jacketed TELEPRENE . . . consequently they now expect comparable high quality from *all* WB telephone wires . . . AND THEY GET IT!



Well Built Wires Since 1899

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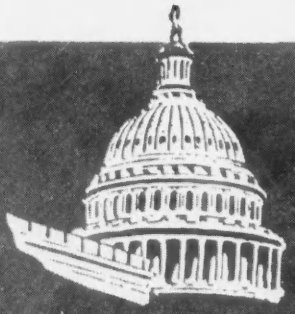
WASHINGTON NEWSLETTER



"Under An Obligation"

THE JUSTICE Department will be "under an obligation" to resolve any "conflict" of interpretation of the January, 1956, consent decree entered into with the Bell System by placing the matter before the federal court which has retained jurisdiction over the decree "for a judicial construction of the final judgment," the agency has declared in a filing with the Federal Communications Commission.

The Justice Department pointed toward such action "should the Commission fail to agree with us" on the impact of the decree. Indicating that the move would not be made unless the FCC permits the American Telephone & Telegraph Co. Long Lines Department's tariff providing for lease and maintenance of private mobile radiotelephone systems to become effective, Justice said "However, it may be that resort to the court may be premature at this time since the tariff has not been approved by the Commission."

In the filing, submitted under the procedure established by the Commission when it made Justice an intervenor in the lease-maintenance case, Justice said it "is initially responsible for the enforcement of the final judgment. . . . We urge that the Commission should give great weight to the construction of the judgment adopted by the governmental agency authorized to enter into and charged with enforcement of the judgment."

AT&T, in outlining its position in the case, has declared that the Justice Department has taken a stand which, if accepted, would in fact "result in reducing competition by eliminating entirely that from the telephone companies." AT&T has emphasized that private line services have been offered since the beginning of the telephone industry.

Also filing an answer to the Justice Department's position, the U.S. Independent Telephone Association, in prehearing legal statements submitted to the FCC, has pointed out that its members are not bound by the Western Electric Co.-Justice Department consent decree, but they "may now, or at some time in the future, provide common carrier communications service similar to that proposed in the subject AT&T schedules" covering the lease and maintenance of private mobile radiotelephone systems.

USITA added that "Independent operating companies will purchase on the open market the radio apparatus and facilities necessary to provide such service, just as they are now purchasing radio and telephone equipment, facilities, and apparatus in order to conduct the wire and radio communications business in which they are engaged.

"Such Independent companies would no more be dealing in the manufacture, sale, or trade of radio apparatus by offering to furnish to the public a private mobile radio communications system than they would be as a result of furnishing either a private line service by means of microwave equipment or a mobile private line service under part 21 of the Commission's rules."

The Justice Department has taken the position that antitrust considerations make it clear that the FCC does not have regulatory jurisdiction over the tariff, but that should the Commission conclude that it does have jurisdiction, antitrust considerations would require that the FCC reject the tariff.

The department said its "chief concern" is that the "tariff seeks to convert a private business into a public or common carrier business contrary to statutory antitrust policy and interpretation. It may be that resolution of this . . . point automatically resolves the question of whether the proposed tariff regulation would be outside of the Commission's statutory authority. Nevertheless, our purpose is to present the antitrust issue and any discussion of the Commission's statutory authority is a necessary corollary of that presentation."

It said that "Three factors cast grave doubt upon the Commission's jurisdiction to regulate rates for lease and maintenance of equipment and facilities for private mobile communications.

First, the final judgment (consent decree) presents

a bar to the entry of the (telephone companies) into this field in interstate commerce. Second, for the Commission to subject a private business to public rate regulation would be an unwarranted extension of the regulatory concept to an industry which is presently subject to Sherman Act enforcement.

Third, it follows that unless the lease and maintenance of equipment and facilities for private mobile communications systems are clearly within the statutory authorization of the Commission to regulate rates under II of the act, the Commission is without jurisdiction; if the leasing and maintenance activities are not clearly a 'communication service,' there is no legislative sanction to permit rate regulation."

The Justice Department statement also declared that "AT&T's tariff now seeks common carrier status for its mobile radio equipment leasing business. But the leasing and maintenance of equipment and facilities for private mobile systems has always been a private contractual matter. The Communications Act nowhere provides for the regulation of rates to be charged for such equipment and facilities or for their maintenance. When to this is added the mandate of section 313 (that all U.S. laws dealing with unlawful restraints and monopolies are declared to be applicable to the manufacture, sale, and trade in interstate commerce of radio apparatus and devices), we believe that the issue should not be clouded by extension of common carrier jurisdiction into the realm of private business."

It noted that the telephone companies "have suggested that rates for the lease and maintenance of equipment and facilities for private mobile systems were not heretofore subject to regulation because the (companies) had not until this time offered to make such equipment and facilities available to all. To accept this thesis as conferring jurisdiction upon the Commission would permit a common carrier to transform any private business into a common carrier service by the mere act of filing a tariff."

The Justice Department has suggested that the AT&T tariffs constitute a "package deal" — with no separate charges for maintenance — and thus may violate the Clayton Act, or that the tariffs may violate the Sherman Act in that equipment is offered only on a lease basis, with a five-year termination charge, which "necessarily perpetuates the arrangement into a five-year leasing period."

"Package Proposal"

IN ANOTHER pending FCC development — the package proposal to implement newly derived 152 megacycle band "split channel" land mobile radio frequencies and generally to reshuffle rules in the public safety, industrial, land transportation, and domestic public land mobile radio fields — the USITA supports the proposed assignment of five frequency pairs in the 450-460 mc band for communications common carriers' maintenance and construction activities within the utilities radio service, pointing out that this would provide "adequately" with the possible exception of those companies operating in or adjacent to densely populated areas. On other portions of the rulemaking, USITA said it is "unalterably opposed" to the establishment of business radio service private point-to-point radio systems on the terms proposed by the FCC, and stressed that "Private point-to-point radio systems should not be authorized when common carrier service is available." The USITA asked the Commission to hold off decision on this point until the FCC's 25-890 mc study is completed.

USITA also asked that Rural Electrification Administration telephone and electric borrowers operating in the same territory be permitted, if they wish to use jointly a single mobile radio system to serve their construction and maintenance vehicles. USITA suggested that the FCC "consider making REA telephone cooperatives generally eligible to utilize jointly with REA electric cooperatives frequencies available to electric utilities."

USITA said it "would strenuously oppose a general sharing of communications common carrier frequencies with other utilities," however.

Excise Tax Revenues

RECOMMENDED plan under which 10% of local telephone excise revenue would be credited to the states has been agreed to by the Federal-State Action Committee, a group composed of top federal officials, headed by Treasury Secretary Robert B. Anderson, and 10 state governors.

The group — whose proposals virtually all would be subject to Congressional and state legislature action — has approved a program under which most vocational educational programs, construction of plants to combat water pollution, and some federal grants for rebuilding public facilities destroyed by natural disasters would be transferred to the states. The telephone excise plan would provide the states with the funds for the programs, assuming all necessary approvals.

Under the telephone excise program, the 10% local telephone federal excise would be continued for five years, but the states would be urged to enact a 4% excise of their own. If they did, telephone users would continue to pay a 10% total levy, and the telephone companies, acting as tax collectors, would deduct the state tax from the amount remitted to the federal government. At the end of the five years, the federal tax would drop to 6%, whether or not the states had imposed taxes of their own.

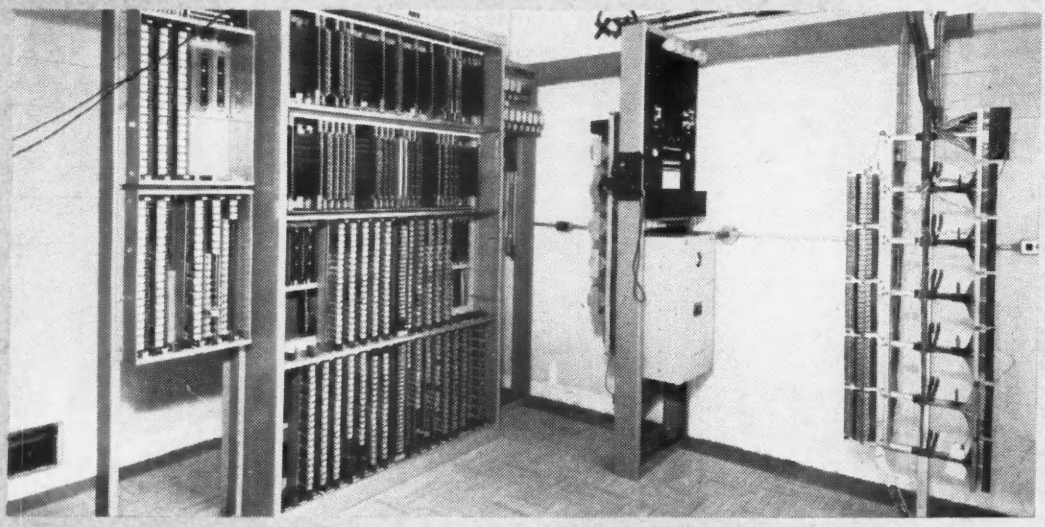
HOME EDITION

THE LEICH DIAL

VOL. 90-34 C

CONVERSION TO DIAL TO 50TH ANNIVERS

OTWELL, INDIANA BECOMES MIDWEST TELEPHONE CO.'S 11TH LEICH DIAL SYSTEM INSTALLATION



(Above) This Leich Dial System gives approximately 200 subscribers in the Otwell, Ind., area modern, dependable dial switching.

(Below) This new exchange building houses the Leich dial installation in Otwell. The community's old magneto switchboard was located in the house on the left.

With the conversion of Otwell, 11 of the Midwest Telephone Company's 12 Indiana exchanges have Leich Dial Systems.

The Otwell exchange gives approximately 200 subscribers modern, dependable dial switching. Equipment is on order for converting it, and all of the company's dial exchanges, to meet nation wide inter-toll dialing requirements.

Paul Thoren is president of the Midwest Telephone Co. and Henry Thompson is vice president and general manager. Their only remaining manual central office is at Petersburg, Ind. They plan to convert it to dial in the next few years.

If you're planning a conversion to dial, too, we make this suggestion. Investigate every type of dial system made. Get all the information you can. See how each fits your needs.

While you're assembling the facts, we, of course, hope you'll check into the Leich Dial System. One good way is to talk to the owner of a Leich dial switchboard.

You might ask about Leich's jack-in flexibility, all-relay dependability and easy, economical maintenance. They are some of the reasons why there are now over 800 Leich Dial Systems in service.

We'd be glad to send you our catalog, too. Write us today. There's no obligation, of course.

LEICH

A MEMBER OF THE GENERAL TELEPHONE SYSTEM — ONE OF AMERICA'S GREAT COMMUNICATIONS SYSTEMS

SYSTEM NEWS

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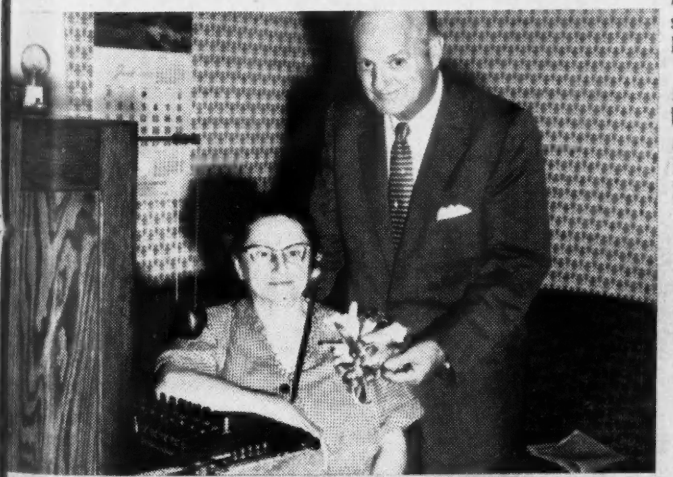
64 Pages

PLAYS SECOND FIDDLE
ARY OF OPERATOR

Garland Skelton, of the Indiana Public Service Commission, presented Mrs. Scraper with a special citation.



Here's Grace Scraper with Mr. Paul Thoren, president of the Midwest Telephone Co. She is seated at the old Magneto switchboard which was replaced by the new Leich Dial System.

CUT-OVER DAY BECOMES "GRACE SCRAPER DAY" IN OTWELL, INDIANA

The Midwest Telephone Co. gave a refreshing twist to their dial cut-over day in Otwell, Indiana. They felt a telephone operator's 50 years of service deserved the spotlight. So the switch to dial took a back seat to Grace Scraper's 50th anniversary. June 1, 1957, became "Grace Scraper Day."

During her 50 years Grace Scraper gave cheerful, self-sacrificing service to the people of Otwell. When sickness, death, or accidents kept the lines busy, she went without rest.

At one time she was not away from her home, where the switchboard was located, for 5 years. For many years she did all the billing herself, and walked to do the collecting.

Receives Citation, Gifts

Mr. Garland G. Skelton (upper left), member of the Public Service Commission of Indiana, awarded Grace Scraper a special citation, the only one of its kind ever issued by the Commission.

The citation reads:

"Grace G. Scraper of the Midwest Telephone Co., Inc., is hereby honored and this citation is presented in recognition of 50 continuous years of service rendered to the public in the sovereign state of Indiana in the telephone industry, beginning on June 1, 1907, continuing to June 1, 1957, without interruption in the town of Otwell, Ind. Signed—John W. Van Ness, Garland G. Skelton, Ira L. Haymaker, Paul M. Tingle."

The Midwest Telephone Co. presented Grace with two beautiful chairs for her home.

Grace to Remain

Otwell's cut-over to dial does not mean Grace Scraper will be retiring from the telephone business. She will continue to operate the business office for the telephone company in Otwell.

It is interesting to note that her first year as an operator, 1907, was the year Leich Electric Co., manufacturer of Otwell's new dial equipment, was founded.

FRENCH PRICES DRIVE OUT TOURISTS, SAYS PARIS PAPER

LEICH SALES CORPORATION, 427 WEST RANDOLPH STREET, CHICAGO 6, ILLINOIS

PACIFIC COAST: 11401 WEST PICO BLVD., LOS ANGELES 64, CALIFORNIA

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manufacturers of telephones, switchboards and related apparatus since 1907

60 Years
of Growing Service
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Pilgrim's progress

Since the first Thanksgiving . . . the essence of our progress has been an improving ability to communicate. To share ideas and events *instantly*. Today, Independent telephone companies provide this indispensable service throughout *two-thirds of the entire area of the nation* . . . look ahead to an expanding future built on enterprise.

INDEPENDENT TELEPHONE COMPANIES

helping you reach all America

U.S. Independent Telephone Association
Pennsylvania Building, Washington, D.C.

EDITORIAL

"The Schools Can't Do It All"

AN INTERESTING report came to us through the mail the other day. It was big, it was bulky, and it looked important. Those three characteristics made us lay it aside for a careful reading when we found the time to tackle something big, bulky, and important.

Last weekend we found the time, and we discovered the report arrived at some conclusions on one of the basic reasons behind this country's shortage of scientists that matched a few ideas we have championed in the past.

Briefly, the report is a new study prepared by the Council For Technological Advance of the Machinery & Allied Products Institute (MAPI). The name may be somewhat of a tongue twister, but the facts reported by the Council's study are plain, simple, and easy to understand.

In short, the study concludes that — "*To a large extent American education, especially through High School, is adapted to the average student. Emphasis is placed on the courses which are most popular. . . . Technical manpower, however, must be above average, and the educational system of the United States does not provide adequate opportunity for enough students to obtain the training the modern world needs.*

"*Quantity of education has increased at a phenomenal rate but quality from the viewpoint of America's requirements for scientific and technical leadership has in many respects declined . . .*"

Describing this American educational dilemma as a "*dismally vicious circle,*" the study, rightfully we think, blames two existing conditions:

(1) *Public school pupils tend to shy away from tough science and mathematic courses; and*

(2) *Higher paying jobs in industry are pulling too many of the available and qualified teachers from their intended professions.*

We think it is time for all American industry to look at what's happening. Actually it can be summed up in one short sentence: *Fewer pupils are getting firm foundations in the vital subjects from what appears to be an overall poorer quality faculty.*

What to do about the problem is keeping many of the nation's leaders at their desks long after 5 p.m. each day. Scientific resources and the school system that produces technically trained personnel have become matters of high public concern.

A youth knocking at the college door all too frequently is inadequately prepared for college work. In a recent sampling survey covering over 200 colleges, over 400 freshmen on the average in each college were forced to take sub-college courses to overcome deficiencies in mathematics.

Such facts focus attention on the problem and many important people are searching for cures.

Such effort is all to the good but we wonder if the cure isn't right now hidden in the loving hands of the nation's mothers and fathers.

We believe it is. And we believe it will make itself known when *big people* and *little people* in the *big towns* and the *little towns* wake up and realize that in the final analysis *the schools can't do it all* the parents have a load to carry too.

And that load involves many things besides dropping into the PTA meeting for a sociable cup of coffee and a few rounds of applause for a youngster who recites "An Elegy Written In A Country Churchyard" and swallows his gum doing it.

Actually the load that should be carried by all parents mainly requires that they take a definite interest in their local schools — an interest that will cause them to determine if the curriculums are chosen and taught to bring their children the significant lessons of the past, acquaint them with the most revelant facts about their world environment, its social, political and other characteristics, as well as giving them the knowledge and the skills they will need to continue the development of the scientific and technical potential of this country.

And, that interest in what is being taught should only be the start. It should extend itself to include an interest in the teachers and their problems, and parental guidance of a calibre that will inspire children to tackle "hard" subjects.

We have a feeling that when the parents of this country really become interested in their schools and what their children are learning in those schools this country will be well on its way to solving its education problem.

After all, as we said a few paragraphs back "*The Schools Can't Do It All.*"

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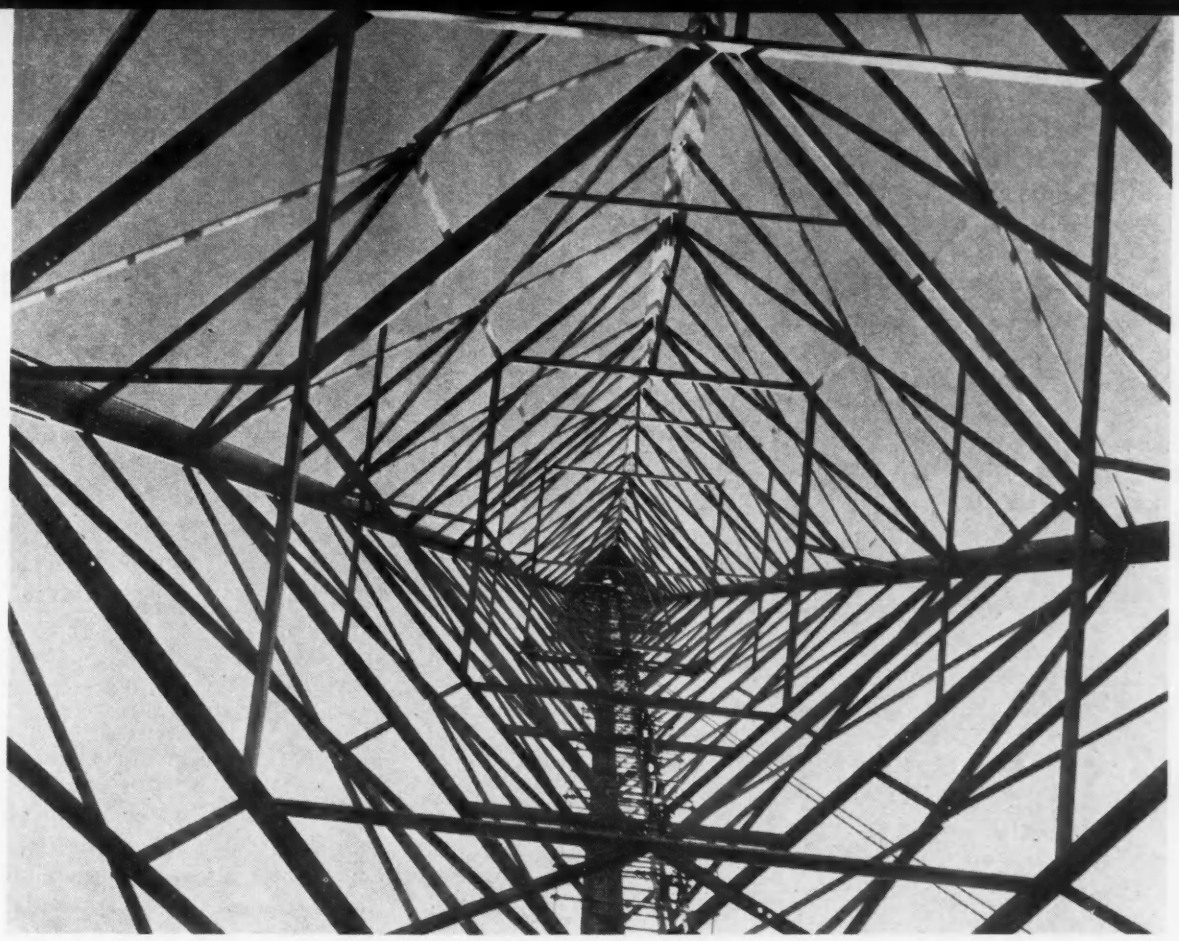


This unusual view shows bracing required in design of tower for winds up to 150 miles per hour. (Courtesy Blaw-Knox Co.)

Engineering And Economic Aspects of Microwave Service

By E. H. DANNER*

MY TOPIC, microwave radio, is certainly a dynamic one. For microwave is one of the fastest-growing services — one of the most exciting new tools — in telephony today.

When I use the word "new" in referring to microwave, I don't mean that in the full literal sense. Because even though microwave came into the telephone industry just within the past decade, it already is being widely used. In fact, there's microwave operating in every state today.

More than 25 Independent companies have point-to-point microwave systems in use, and some of these are very extensive installations. Microwave now provides 22 per cent of the long-distance telephone circuit mileage of the Bell System, and 78 per cent of its intercity television circuit mileage. By 1962 — five years from now — Bell expects the percentage of its long-distance circuit mileage provided by microwave to jump from the present figure of 22 per cent to 40 per cent. And by 1967, the percentage of microwave will be 55 per cent.

I have no figures which accurately forecast the growth of microwave use by the Independents. But it's going to be sizeable, of that we can be sure. Independents have been rather slow to get their feet wet in radio. But now that some have tried it and found it very much to their liking, I believe a lot of others who have held back will be getting into the swim soon.

While there are millions of miles of radio in use today, there is still an air of newness about microwave. New microwave equipment is being developed and introduced, some of the higher frequencies are still too new to be in use yet, and there are many new applications for microwave which will be made in the years ahead.

The future course of microwave use by the common

* *Mr. Danner is President, General Telephone Co. of the Southwest, San Angelo, Texas.*

carriers is perhaps being charted at this very moment by the Federal Communications Commission. Right now, we don't know whether the FCC is going to grant additional frequency space that has been requested and is so urgently needed by common carriers. We hope — in fact, we believe — new frequency allocations will be made for common carrier fixed and mobile service. But just when, is anybody's guess.

Allocation of Frequencies

AS YOU KNOW, the FCC last May began a full-scale hearing in the matter of allocation of frequencies in the bands above 890 megacycles. This hearing continued during the summer for eleven weeks. In June, the case for common carriers was presented by representatives of the USITA, by Lenkurt Electric Company and the American Telephone and Telegraph Company.

Chart *Number One* shows, in the left column, the present allocations for common carrier service above 890 megacycles; and, in the right column, the allocations proposed by the telephone industry. At first glance it may seem that there already is a lot of frequency space available to us. But when you look at the chart closely, you realize that much of this can't be used today.

More than half of the bands listed are in the higher frequencies for which there is no commercial equipment available. The engineering work at those frequencies on the lower half of the chart is still in the experimental stage. Eventually, we should be able to use them. But it's going to be some time yet. And that doesn't help our immediate problem.

You will notice that, except in the extremely high frequencies, there are only two bands allocated to common carrier fixed services. One is the band from 6925 to 6425 megacycles. We couldn't do much planning at this frequency until just recently because there wasn't equipment available.

The other band for fixed service is 3700 to 4200 megacycles. That hasn't been practical for point-to-point systems because it's been used for the trans-continental microwave network which carries television signals and large groups of voice circuits across the country.

So during the past five years the common carriers, in order to provide point-to-point microwave service, have had to use a band they share with others. This is 890 to 940 megacycles, a band that is ideal for telephone light-haul radio routes — or skinny routes, as they are often called. There are approximately 75,000 voice-circuit miles being operated by common carriers in the 890-940 band today. Our company has microwave operating at this frequency. So do two dozen other Independents and several Bell companies.

As you can see from the chart, we are hopeful that the FCC will allocate some additional microwave frequencies for fixed service. In particular, we need immediately the 890-940 band on a primary basis.

At present, this frequency band is allocated primarily to ISM — Industrial Scientific and Medical service. So

PRESENT ALLOCATIONS	PROPOSED ALLOCATIONS
890 - 940 mc Broadcasting and Fixed (ISM 915 mc)	890 - 940 mc Common Carrier Fixed
3500 - 3700 mc Mobile (Except TV Pickup)	3500 - 4200 mc Common Carrier Fixed
3700 - 4200 mc Common Carrier Fixed	
5925 - 6425 mc Common Carrier Fixed	5925 - 6425 mc Common Carrier Fixed
6425 - 6575 mc Mobile (Except TV Pickup)	6425 - 6575 mc Common Carrier Fixed & Mobile
7050 - 7125 mc Common Carrier TV Pickup & STL	7050 - 7125 mc Common Carrier TV Pickup & STL
10550 - 10700 mc Fixed & Mobile	10550 - 12200 mc Common Carrier Fixed & Mobile
10700 - 11700 mc Common Carrier Fixed	
11700 - 12200 mc Mobile (Except TV Pickup)	
12700 - 13200 mc TV Pickup & STL Available Conditionally to Common Carrier	12700 - 12875 Common Carrier TV Pickup & STL
16000 - 17850 mc Fixed & Mobile	16000 - 17850 mc Common Carrier Fixed
26000 - 30000 mc Fixed & Mobile	26000 - 30000 mc Common Carrier Fixed

Left: — Present allocations for common carrier service above 890 megacycles. Right: — the allocations proposed by the telephone industry. Note, that in the extremely high frequencies there are only two bands allocated to common carrier fixed services.

if the common carriers now using the band are interfered with by ISM devices, no protection will be received from the FCC. In other words, common carriers in this band are using it on a secondary basis. However, no use has been made of the band yet by ISM, and the Commission has taken actions to minimize the possibility of interference.

When the 890-940 band was allocated to ISM in 1947 on a primary basis and to common carriers on a secondary basis, it was believed that the two could operate together in this region without serious interference. But it's now realized that this is not possible. No electric stoves or other ISM devices have been manufactured for operation in this band, and it's not likely that they will be before the FCC resolves the allocation problem. There may be some decision on this before the end of the year.

Testimony presented to the FCC has pointed out that a primary allocation of the 890-940 band for common carrier fixed service is needed not only for the continued operation of existing systems, but also to provide for additional stations. There are many situations where frequencies below 1000 megacycles provide the only means of achieving satisfactory point-to-point service. The propagation characteristics and reliability of 890-940 are required particularly for over-water routes and in difficult terrain where long hops may be necessary.

Microwave Use Increasing

UNTIL A FEW years ago, many telephone men considered microwave as something to be used only on long routes or where great numbers of circuits were

needed. This feeling began to change in 1951 when the first microwave system was developed specifically for short-haul and light-route applications by common carriers. Since then, the use of microwave for these purposes has increased slowly but steadily. Great strides have been made, technically as well as economically, in improving radio and channelizing equipment. Microwave is a well-accepted means of handling increasing traffic requirements today.

But, to use a time-worn phrase, "You ain't seen nothin' yet!" In the years immediately ahead, you are going to see a lot more use of microwave for relay of traffic over medium and light-haul routes. In fact, it's been predicted that during the next decade the use of radio for short-haul intercity purposes will reach proportions at least as great as the use on long heavy routes.

Furthermore, you are going to see microwave used for many types of local services. These are among the new applications for microwave to which I referred earlier. And this is where the extremely high frequencies should find their greatest use. We know that as frequencies get higher, the distances over which signals can be reliably transmitted becomes shorter and shorter. In the spectrum between 16,000 and 30,000 megacycles, for example, I am told that it may be necessary to put transmitter and receivers only a few miles apart. This would not necessarily cause an economic problem, because this part of the frequency spectrum could be used for local service to transmit between short points within a city or a small area.

Many of you probably have been thinking of those local service needs in the future, just as we have been in our own company. There is certain to be a local demand one of these days, and it would behoove every Independent to be doing some thinking and planning for it now.

There already is beginning to be some demand for circuits for data transmission and for closed circuit television by business and industry. We are entering an era of automation. Computers and other devices are rapidly coming into use for the processing of information. Data, in various forms, is fed into a central point where it is processed and eventually transmitted out again to the places where it is required.

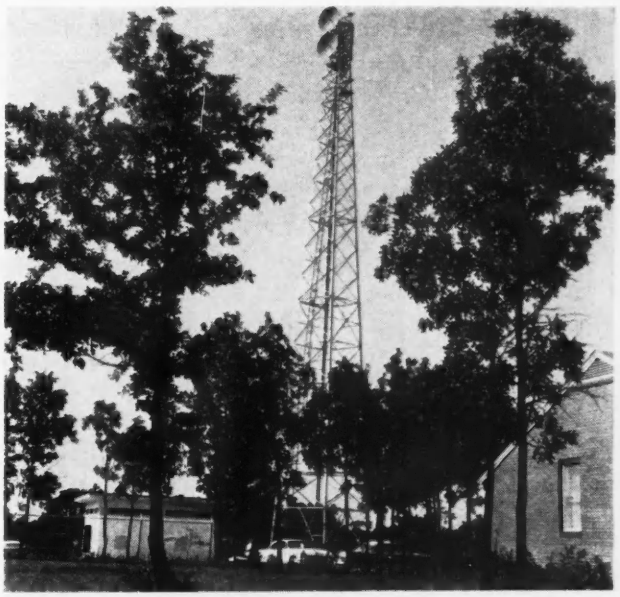
In order to do this it is essential to have good communications. It is natural for a company in need of data transmission facilities to turn to its telephone company because it will need lots of circuits, and they must be good circuits. Toll-quality circuits — the kind microwave can provide. The government and the armed forces also need data circuits. Some of you may be providing circuits for SAGE.

Just as microwave is handling much of the transmission of television signals for broadcast purposes, so can it fulfill the future need for circuits for other forms of TV. Closed circuit TV is expected to bring a growing demand for broadband circuits in local areas, and this again will mean more microwave facilities.

And don't forget about phone vision — or whatever other name may be given to the gimmick which will make the telephone an instrument for visual as well as audio use. This is already possible, although it's not yet ready for commercial use. However, it's likely that it will be before too many more years pass. I expect to see an attachment for visual purposes on my phone and a lot of others within the next generation.

New Applications

WHAT ABOUT some of the other new applications for microwave in the future? Well, one of the things that is being discussed is the possibility of using it for various types of local circuits. These might be trunks between central offices, between remotely located switching centers, between a switching center and a central office, or even for circuits to a customer's premises. Frequencies between 16,000 and 30,000 megacycles are being counted on for these local transmission facilities.



Shown here is one of the five new towers erected by Carolina Tel. & Tel. Co. The concrete building near the base houses carrier equipment.

Bell Laboratories has been doing experimental research at those extremely high frequencies, and it reports some promising results. While the attenuation at these frequencies may limit radio hops to distances of only a few miles, there are some advantages to be found in this. Since these short microwaves don't travel far, the same frequency might be used several times within the operating area of a company. It would be possible to use relatively low power, compact transmitters and receivers, small towers and antennas. It might be feasible to mount the whole package on a building or a telephone pole. Bell Labs reports that it is doing research on a microwave repeater system for short-hop service which is essentially a "pole-line radio relay." Such a system might provide rural service.

Microwave also is needed in the future for mobile service — on land, at sea, and in the air. It is hoped that FCC soon will take action to allocate adequate frequencies for mobile radio. Engineering considerations

warrant use of lower frequencies for land mobile service. Frequencies above 890 megacycles are not considered too good for this particular requirement.

However, they probably would be all right for air-to-ground service. Statistics show that in the United States there are approximately 64,000 civil aircraft and a little more than one-fourth of these are private planes for business transportation. There is a demand for public telephone service by many of the people owning and operating planes, but the only way in which air-to-ground radio can be provided now is through use of certain channels shared with maritime service.

Engineering & Economic Aspects

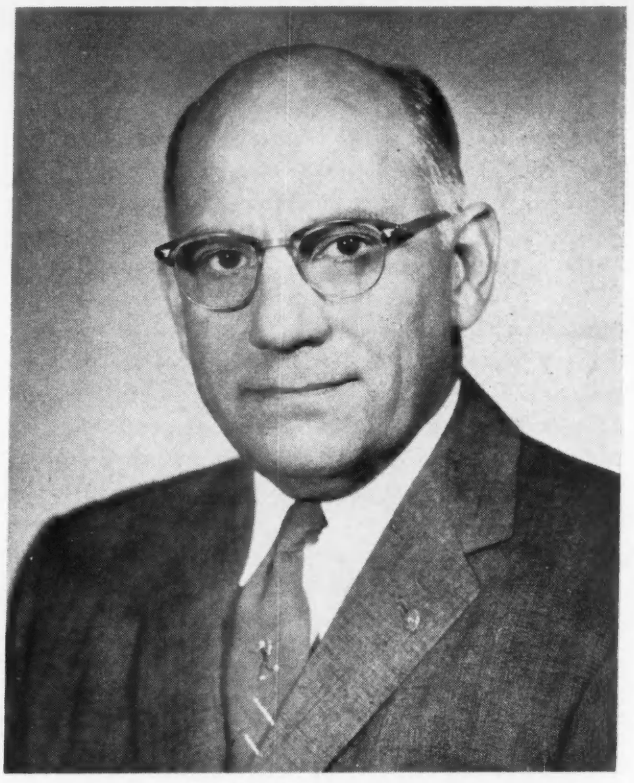
I HAVE BEEN discussing various facets of microwave, with emphasis on the future needs it is expected to meet. In the time remaining, I would like to talk a little about the engineering and economic aspects of microwave as it's being used today for point-to-point service. This, of course, is the application for which almost all microwave is being used by Independents.

While our company has two microwave installations, I've actually had only a limited amount of first hand experience with radio. However, for several years I've taken a personal interest in it, and I have devoted considerable time to checking our own engineering studies and those made by other companies, including A.T.&T. I've talked to equipment manufacturers, to radio engineers who have helped design and install systems, and to officials of other companies who are using microwave.

I keep hearing of new reasons why microwave is becoming an integral part of many Independents' toll plant. Just recently, the president of a western company said one of the chief reasons his company would be using more and more microwave is because it requires no right-of-way. He explained that in his territory it is not always possible to get a right-of-way along roads, especially the new superhighways and some of the other major highways being financed with federal aid. In other words, you can't always put up a pole line along a road. And if you have poles already up, you may be required to do away with them entirely when a road is widened or improved as part of the federal highway program.

You probably are aware that microwave usually is the best means of obtaining new circuits in rough or uninhabited terrain. Our company now has an installation in Jacksonville, Texas, furnishing circuits to Stryker Dam, which is 17½ airline miles away. It is a heavily wooded area where there is no designated right-of-way. To build physical facilities, we would have had to go into the territory with a bulldozer after obtaining right-of-way clearance. The physical circuits would have been 25 or 26 miles and would have required a total cost of $50,000. The microwave installation was made for $15,000 — less than one-third the cost of physical circuits.

Our second microwave installation — linking Sherman, Dallas and Denton, Texas — is in a metropolitan area where future heavy growth is expected. Our new system here gives us a basis from which we can increase our toll circuits with little additional cost, and it also gives us a basic foundation from which we can extend our toll area operations in the future to other points. It would have been more expensive to use cable or open wire lines for this system because they could not be expanded as easily, as rapidly, or as economically.



The author, E. H. DANNER, is president of the General Telephone Co. of the S. W., San Angelo, Texas.

At Sherman, for instance, we are initially using 36 circuits, whereas the capacity of this installation is 120. We can use the extra circuits at any time by adding plug-in channel units to the common equipment already installed. Thus it's possible with microwave to get additional channels at a decreasing unit cost after the initial investment.

On the Gulf Coast of Texas, we operate the exchange of Port Lavaca on Matagorda Bay. Across the Bay on Matagorda Island is an Air Force installation. The Air Force uses this island as a three-altitude bombing range. The Bay is used for shipping and there is extensive passage between the mainland and the island. The Air Force needs communications to all outside points. But if we lay a submarine cable 22 miles across the Bay, it's going to be quite expensive. In addition, the cable could be damaged by shipping and strong currents. So microwave is the answer there.

Initial cost isn't our only consideration in providing overwater communications for the Air Force. There are two other important factors which weigh the scales in favor of microwave. First, maintenance would be easier. If there's maintenance work required later, it would be

at the two terminals, and not somewhere in the Bay as a submarine cable might necessitate. Second, microwave is more mobile than cable. If the need for communications from Matagorda Island lessens or ceases entirely in the future, we could salvage the microwave equipment more easily than 22 miles of submarine cable plus its associated terminal equipment.

In these three Texas installations — the two already in and the other one planned — there is graphic evidence of some of the advantages of microwave. We know from personal experience that it's best for rugged terrain, for overwater hops, and for areas of rapid growth. And we believe that it is easier to maintain, can be expanded both rapidly and economically, and is more mobile. It requires no right-of-way, and it has the flexibility of providing either a small number or a large group of circuits.

In stressing the economical aspects of microwave, I do not want to convey the impression that it is something for which you should go bargain shopping. When looking for microwave equipment, look for the best — not the cheapest. For in the long run, cheap equipment will actually cost more. With microwave, quality does not cost — it pays.

In selecting your equipment, you will want to deal with a company that knows the telephone business — one that recognizes the importance of toll-quality and makes telephony its specialty, not just a sideline. Some microwave equipment is designed for all sorts of situations; it will be sold to anyone who comes along with the idea he wants a radio system — for private or common carrier use. And then there is equipment designed specifically for telephone toll use. That latter equipment is the kind you will want to consider most seriously.

You don't need a staff of radio experts today to begin using microwave, nor do you have to disrupt your schedules or hire special people to install or maintain an installation. It's now possible to get an entire system on an E.F.&I. or "package plan" basis. You can contract for your microwave system to be engineered, furnished and installed completely — and even maintained, if you so desire. The entire job — from the time initial surveys are made until the system is in and turned up for service — is somebody else's responsibility. This, in most cases, costs less than doing it yourself. And it leaves your own engineers and construction crew free for other tasks. We used this E.F.&I. service on our recent installation between Sherman, Dallas and Denton.

There are a lot of maps and charts I could show you, but time doesn't permit. However, in closing I want to discuss briefly what four Independent companies have done in one state.

The Florida Installation

YOU HAVE perhaps heard or read about the microwave systems that have been put into service in Florida during the past year by four Independent companies: Peninsular, Intercounty, North Florida, and the Florida Telephone Corporation, Ocala, Fla. These systems all operate in the 890-940 megacycle band and serve several key cities in Florida. There already is more microwave in use by Independents in Florida than any other state, and I understand that additional installations are planned there.

As a result of putting in the intercity toll circuits these companies have increased their toll revenes tremendously. And by using microwave, they are getting a greater profit return on toll business, and customers are enjoying the best in transmission facilities. I believe there is an important moral in this story for all Independents. It's this: Look to microwave toll circuits as a means of keeping revenue up and annual charges down.

I have some figures that I believe are interesting and worth remembering. As I mentioned earlier, there now are approximately 75,000 voice-channel miles actually equipped and operating in the 890-940 megacycle band. This radio equipment isn't loaded to capacity in most instances, and it could carry nearly four times the present number of voice-channel miles simply by adding more carrier equipment. Depending on the length of the system and the number of voice channels initially equipped, these radio circuits that are already in have varied in cost of $63 per voice-channel mile to a maximum of $200 per voice-channel mile. When expanded to capacity, some of these microwave systems will be providing circuits at a cost of less than $25 per channel mile. These costs are considerably below the costs of providing circuits by any other means.

We all know that in the years immediately ahead, it may be a little harder to earn a dollar than it has been during the past decade. Telephone service is catching up with the demand. We have to do more selling. Merchandising has assumed new importance in our operations. We can count on microwave to help us in the future when we are called upon to fulfill circuit needs for data transmission, closed circuit TV, mobile services, and various types of new local services.

But we don't have to wait for the future. Right now we can utilize microwave in improving or adding to existing toll facilities. As has been done in Florida, we may be able to put in new toll circuits that will mean a new source of revenue. The engineering and economic aspects of microwave offer new engineering and economic opportunities for all of us.—*Mr. Danner presented this paper at the USITA Engineering Conference during the* 1957 *USITA Convention.*

Worth Writing For

"*Know Your Local Housing Market.*" A Short Guide to Pertinent Facts and Figures. Published by the Housing and Home Finance Agency, this publication serves as a guide to home builders in sharpening their estimates of the housing market in their own hometown. It discusses several points that should help the builder determine his local housing market, and suggests sources of helpful information. 1956, 27 p. il. Catalog No. HH 1.2:M 34. 25 cents.

Commercial Department Looks Ahead

Speakers at USITA Commercial Conference discussed (1) "Taking The Forward Look;" (2) Telephone Merchandising;" and (3) "New Trends In Judicial and Regulatory Decisions."

By MYRLE SHAFER*

KENNETH L. LAWSON, chairman of the USITA Commercial Committee presided at the Commercial Conference on October 11. The conference held in the Lower Tower of the Conrad Hilton Hotel, Chicago, was addressed by: Hugh A. Barnhart, USITA vice president; Mr. Lawson; B. C. Ames, General Telephone System, New York City, and featured a Telephone Merchandising Panel consisting of Moderator, Colonel L. D. Densmore, Central Telephone Co., Lincoln, Neb., and panelists, John S. Davies, American Telephone & Telegraph Co., New York City, and J. P. Borden, Virginia Tel. & Tel. Co., Charlottesville, Va.

**Staff writer for Telephone Engineer & Management.*

Report of The USITA Commercial Committee

PRESENTING the USITA Commercial Report, Mr. Lawson told the conference the Commercial Committee has concerned itself with several matters that are of vital importance. These have to do with the increasing prevalence of toll service abuse, the blanketing of the country with directory covers of every description, and lastly, the removal of restrictions covering attachments.

"Last year," he said, "your committee urged all telephone companies to follow the Bell System in filing proper tariffs to make it possible to take effective action against flagrant violators of toll service. It is important now that both Bell System and Independent companies co-operate to the fullest extent in carrying out studies to uncover fraudulent use."

He reported that the procedure involves retention of all toll tickets covering uncompleted toll calls for designated periods. Most Bell System companies retain these tickets the first month of each quarter during the year. Many Independent companies are now doing likewise. The tickets are grouped in such a manner

that they may be exchanged by companies where necessary.

"It is only through co-operation of this kind that usable positive information can be secured," he stated. "All Independent companies are strongly urged to participate in these studies in order to minimize and prevent the spread of fraudulent toll usage. Annual losses from this abuse are conservatively estimated to run into the millions."

Stating that manufacturers of novelties and others are extremely active in the sale of directory covers, Mr. Lawson reported that one of the most popular types are now made of plastic with a certain amount of transparency.

"Most of these covers carry advertising messages," he said. "In some cases, an effort is made to provide sufficient transparency in order to maintain that the printing on the directory is not obliterated."

Mr. Lawson warned that unless this practice is checked, the loss in directory revenue can become considerable for the simple reason that regular directory advertisers expect to be protected from such infringement.

"It is disturbing to note that a recent court decision gave unlimited permission to the use of such directory covers," he said. "There are other decisions, however, which tend to protect telephone companies through recognition of unfair competition and violation of copyright. Proper tariff filings and vigorous prosecution of violators is the only effective means of combatting this menace."

Stating the recent court decision involving the Hush-A-Phone matter "opens up the whole field of attachments," Mr. Lawson said, "telephone companies have recognized that they now can only hope to protect themselves against such attachments that are injurious to equipment or to the service."

"While this may sound innocent enough," he said, "the problem is complicated by the fact that devices of various types may be placed on telephone equipment scattered throughout an exchange. The problem then becomes the question of how

USITA Commercial Committee Chairman K. L. LAWSON, Lincoln, Neb., presided at the USITA Commercial Conference.

to proceed to remove such attachments."

The Commercial Committee report urged each company to discuss this problem with their regulatory body in order that they may be familiar with the problem.

"It is hoped," Mr. Lawson stated, "that the various commissions will recognize that positive restrictions on attachments are important and essential for the protection of service. We observe, however, that one state commission has already requested telephone companies to revise their intrastate tariff filing to make it conform with the FCC order. It is to be hoped that action such as this will not become widespread among the states. . . ."

Taking A Forward Look

GENERAL Telephone Corporation's Director of Merchandising, B. C. Ames, emphasized to the Commercial Conference his belief that "Merchandising is not simply intensified or high pressure selling."

"As I see it," he said, "merchandising really represents an entirely new operating philosophy for our business, and as such it naturally involves significant changes in many of our long-standing operating policies and procedures. Stated simply, I think merchandising is an optimistic philosophy that recognizes the burgeoning growth of the American economy and the profit possibilities inherent in this situation for any company that is willing to pursue a dynamic approach to the market. . . ."

Reviewing some of the more important factors that have contributed to America's economic growth during the past six years — 1950 to 1956, Mr. Ames referred to: —

(1) *A rapid increase in population*: 18,000,000 people added to the total population during the past six years.

(2) *A substantial increase in labor force*: 5,638,000 people added to the labor force — and the forecast that the labor force will accelerate from 800,000 a year to 1,200,000 a year during the next 10 years as the huge baby crops of the '40's come into productive age.

(3) *Increased productivity*: Through technological advance, improved skills and more scientific management, America has increased its production of goods and services by 28 per cent during the past six years — three times the rate of increase of the available labor force.

(4) *Increased capacity to consume*: The rewards of increased productivity have been broadly shared, resulting in an increase in standard of living of 22 per cent in terms of constant dollars.

(5) *Increased mobility*: From a marketing standpoint, perhaps the most significant change is to be found in America's increased mobility, a mobility that is to be found in two striking forms: *geographical mobility*, in terms of people moving restlessly across the land in search of better opportunities and better living conditions; and *economic mobility*, in terms of people moving rapidly upward in earning capacity.

Although these forms of mobility may be studied as separate phenomena, they are inter-related to a major degree as to cause and effect. During the past six years,

190,000,000 people moved to new addresses — by all odds the greatest phenomenon of mass migration in recorded history. During this same six year period, 12½ million consumer spending units moved into the $4000 a year and above brackets, doubling the number and disposable income of those families.

"This is by no means a complete list of the factors which could document the dynamic growth that surrounds us," Mr. Ames said. "It should be sufficient, however, to remind us that this growth is more than just a post-war boom and that it is likely to continue well into the foreseeable future . . . . Growth, unending growth, appears to be a natural, continuing, and predictable phenomena in this country. Our growth line has been trending upward at a rate of 2½ to 3 per cent annually compounded. Actually, in the past 10 years our rate of growth has been running from 3 to 3½ per cent but most economists agree that a 2½ to 3 per cent annual gain in our economy is a reasonable basis for planning for the future. In effect, this means a doubling in the size of our Gross National Product every generation."

Commenting that most economists agree there is no reason to expect a reversal of this upward trend, at least on a secular basis, Mr. Ames pointed out that "Unquestionably, we will encounter leveling-off periods and adjustments, but then, we should not expect to reach our long-range objectives on straight-line projections."

"Many businessmen now feel the period of break-neck expansion to catch up with deferred war-time demands and new orders is over," he said. "Even so, very few of these men expect a reversal of the growth trend in the years ahead — a reversal that would stymie President Eisenhower's forecast of a 500 billion dollar economy within a decade. Indeed, most corporations expect the economy to break the 500 billion dollar ceiling (in terms of 1956 prices) in the early 1960's and to reach a level of between 550 and 600 billion dollars by 1965.

B. C. AMES, Director of Merchandising, General Tel. Corp., New York City.

"In view of these considerations, it would seem that inflation is a much greater likelihood than depression, and accordingly, a much sounder foundation for planning for the future. I'm not referring to a galloping inflation, of the type that plagued Germany in the 1920's, but rather continued slowly rising prices accompanying continued rather full use of our resources. In short, there is no reason not to expect a continued rising trend in growth at something like the historic rate of 2½ to 3 per cent annually compounded, and a realization of a 550 to 600 billion dollar economy sometime in the mid-1960's. . . ."

Turning to the telephone industry, Mr. Ames reported that operating revenues of the telephone industry have in recent years accounted for about 1.6 per cent of America's Gross National Product.

"At the close of 1956 for example," he said, "our G.N.P. was running at $412.4 billion, and total industry operating revenues were running at 6.58 billion for the last 12 months completed. Now, as an industry our share of G.N.P. has been increasing. In the early 1940's our share approximated 1.4 per cent and I have seen statistical estimates that indicate that it is not unrealistic to assume that our share will reach 2 per cent during the period 1960 to 1965. . . ."

Stating 1956 operating revenues for the Independent Telephone Industry approximated $614 million, Mr. Ames said, "This represents about 9½ per cent of total industry revenues."

"Assuming the $600 billion economy does in fact become a reality by 1965," he said, "and assuming the industry percentage of G.N.P. approaches 2 per cent and assuming our share of this figure stays constant at 9.5 per cent, we can expect our operating revenues at today's prices to move well over the billion dollar mark during this period ($1.14 billion)."

Warning that the telephone industry does not have an automatic claim on any specific share of consumer of business spending, Mr. Ames emphasized the fact that the G.N.P. rises do not guarantee that our share of G.N.P. will rise or even remain stable, — it could fall. . . ."

"I don't think it can be emphasized too strongly that we are not in any sense a true monopoly," he said. "We do not possess a natural or entrenched market position. Even in our own industry there are other businesses threatening to take potential sales away from us. Look, for example, at the 1955 and '56 editions of 'New Sales Products and Ideas.' The list of products on the market included everything from directory covers to home intercommunications systems. But even more important, in the consumer area particularly, we are in competition with literally hundreds of industries selling goods and services that are competing directly with us for a share of total consumer spending power."

Referring to the records of other industries, Mr. Ames reported: — (1) About 90 per cent of all American families have mechanical refrigerators; (2) about 80 per cent have automatic clothes washers; (3) about 75 per cent have TV sets; and (4) only about 70 per cent have telephones, and 50 per cent of these telephones represent service shared with others on party lines, and yet nobody is sharing those refrigerators, washers or TV sets.

"Furthermore," he added, "none of these competing industries have accepted even 100 per cent owner-

ship as a measure of market saturation. More than 98 per cent of our families have radios . . . and more than 70 per cent of these families have a second radio. And look at the sale of portable radios — they're booming. The TV industry is no longer concentrating on selling a first installation. It is upgrading, selling replacements, and above all, it is selling multi-set ownership; one for you and one for the kids.

"Over 12 per cent of the car-owning families have a second car. Among our other competitors are industries selling such services as travel and vacations — now offered on the installment plan. They are taking away spending power that might be ours."

Urging his listeners to "realize this competition for the consumers' dollar is very real," Mr. Ames pointed out that "when the consumer considers primary telephone service . . . he doesn't have much choice . . . he is ours without any sales effort whatsoever."

"But once he has his primary telephone he is a far more discriminating buyer," he said, "and we must compete directly with every other businessman that is after the money our customer is willing to spend for convenience. . . ."

Expressing his belief that this competition will increase in its intensity, Mr. Ames said, "this prediction suggests the conclusion that unless we fight for a growing share of the consumers spending power, there is a real possibility we could slip backward from the 1.6 per cent of G.N.P. mentioned earlier to a smaller share."

"With our economy growing at the anticipated rate this could easily happen while our dollar revenues were increasing each year," he said. "I think all of this points out very clearly that our industry is entering a truly decisive period in its history. We cannot continue to market scarcity. We must grow with the economy. We must merchandise our service as effectively as our most successful competitor.

"We must help our customers to recognize their real telephone needs in their changing living patterns, and we must be ready to serve these needs. I think only in this way can we obtain an increase in our share of consumer spending power. And I think only in this way can we help to build the more favorable environment we need to secure the rates required to underwrite this dynamic growth at higher marginal costs. . . ."

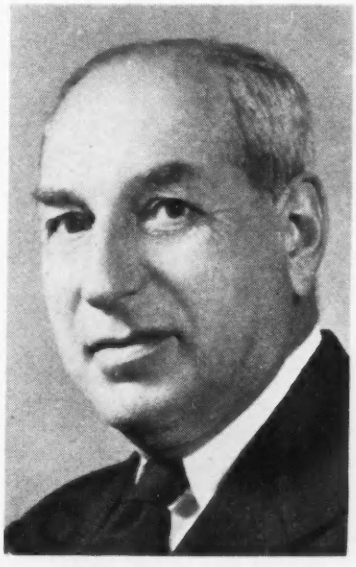
Merchandising Training Panel

COLONEL L. D. Densmore, vice president and general manager of the Central Telephone Co., Lincoln, Neb., and chairman, USITA Merchandising Committee, served as moderator of the Telephone Merchandising Training Panel and introduced Panelists, J. P. Borden, of the Virginia Telephone & Telegraph Co., Charlottesville, Va., and John S. Davies, of the American Telephone & Telegraph Co., New York City.

Referring to Central Telephone System's merchandising training program, Mr. Borden described the following basic points of program:

(1) *The first and most important phase*, and above all the most difficult, is to persuade employes to accept and understand that merchandising is not only a part but an important responsibility of their job.

(2) *The program attempts to overcome the natural conviction* on the part of employes who think they are not salesmen. It is not uncommon for an employe to say — 'I am no salesman — I couldn't sell anything.' The job is to show employes that it is not a sales job. It is telephone merchandising. It is knowing the telephone business — of being able to analyze a subscriber's needs and recommending to him the kind and amount of telephone service needed to meet his requirements.



J. P. Borden, Virginia Telephone & Telegraph Co., Charlottesville, Va.

(3) *The program makes the merchandising job interesting* and understandable by offering some basic and some new merchandising philosophy for discussion techniques which may be employed in contacts with subscribers and prospects.

(4) *The program includes instruction for an understanding of*: — (a) Just what is telephone merchandising; (b) why the company is in the merchandising field; (c) the benefits of merchandising.

(5) *The training shows employes*: — (a) Why people buy; (b) that the telephone business is not only a regulatory business but is subject to sharp competition; (c) that its real competition is the free-for-all competition for a share of the subscribers dollar.

(6) *The initial training program covers* 20 *basic items* of service which may, in most cases, be sold.

(7) *The training program* describes contacts which offer sales opportunity.

(8) *In presenting sales techniques* in order to simplify matters the program divides contacts into four parts: — *Recognition; fact finding; presentation;* and *close.*

Stating that the development of these four parts requires basic instructions in selling technique, Mr. Borden reported that "to provide our employes with some kind of package or a basic approach we present four plans: —

"(1) *The Universal Plan* (4 or 5 telephones). This is unusual, but there are times and places where this will apply.

"(2) *The American Home Plan* (3 telephones). This is very desirable for convenience; one instrument in the main part of the house and one in the kitchen.

"(4) *The Basic Plan* (1 telephone). One instrument in the home:

"We teach our people that they are now ready to present a *packaged*

Please turn to page 42

Here's

D. O. HOOD, President of Columbia Utilities Company of Medford, Oregon, recommends Stromberg-Carlson XY toll ticketing.

COLUMBIA UTILITIES COMPANY

MEDFORD OREGON

November 26, 1956

Stromberg-Carlson Company
Rochester, 3, N.Y.

Att: J. D. Confeld
Senior Toll Ticketing Engineer

Dear Sirs:

Our Stromberg-Carlson XY VID automatic toll ticketing equipment was installed at our White City, Oregon exchange and toll center and cut into service on August 3, 1956. Since that time it has functioned exceptionally well, with a minimum of the "bugs" common to new equipment installations.

Our subscribers at the five dial exchanges equipped soon became quite proficient in dialing direct between these five exchanges, and to the Medford and Central Point exchanges of The Pacific Telephone and Telegraph Company (Bell System) stations. We have received relatively few complaints from subscribers affected by the new direct distance dialing innovation, and have been highly complimented by a great many subscribers.

We had reached the point where installation of an additional toll switchboard position was essential at the White City toll center. However, since installation of the toll ticketing equipment, such is no longer necessary, and we have been able to idle one of the existing positions. The effect is a saving of one or two full time shifts of operators, and at the same time an increased toll volume of around 25 %, and highly pleased subscribers.

Early next year we will expand our direct distance dialing areas to cover six additional Medford tributary exchanges. This should effect some further savings in operating costs, and some additional toll stimulation.

We are pleased therefore to recommend automatic toll ticketing to those companies who are able to "prove in" such operation.

Very truly yours

D. O. Hood
President

White City exchange of Columbia Utilities Company XY toll ticketing effected 25 % increase in toll volume and cut costs for this West Coast independent.

's Proof of the Pudding

Oregon independent boosts toll volume 25%, cuts costs, with STROMBERG-CARLSON TOLL TICKETING

After only a few months of operation, Stromberg-Carlson toll ticketing paid off handsomely for Columbia Utilities Company at its White City exchange.

You will find—as did this Oregon independent—that XY® toll ticketing does a *complete job:* watches traffic automatically, clears recorders on a schedule basis, records data with equal ease on electric typewriter or cardpunching machine.

With our completely compatible equipment, which features flexible routing and rating facilities, you're ready to adapt to the nationwide toll dialing system.

To learn more about how XY toll ticketing will boost your profitable toll revenue, call or write the Stromberg-Carlson representative in your area.

The effect is...an increased toll volume of around 25%, and highly pleased subscribers.

Early next year we will expand our direct distance dialing areas to cover six additional Medford tributary exchanges. This should effect some further savings in operating costs, and some additional toll stimulation.

We are pleased therefore to recommend automatic toll ticketing to those companies who are able to "prove in" such operation.

Very truly yours,

President

STROMBERG-CARLSON

A DIVISION OF GENERAL DYNAMICS CORPORATION

Sales Offices: Atlanta 6, Chicago 6, Kansas City 8, Rochester 3, San Francisco

price quotation," he said. "Training gives pride to the employe. He is proud to sell, to have something worthwhile to sell, and to be a real representative of the telephone company. It gives initiative which would otherwise not develop, except for training. . . ."

Sales Training

THE EXCHANGE Sales Engineer of the AT&T Co., John S. Davies, told the Commercial Conference that "selling in the telephone industry is a team operation. . . ."

"It is a job for the Business Office — it's a job for Plant — for Special Sales Forces, for Directory Sales people," he said. "In fact it is a job for all telephone company employes, regardless of department."

Mr. Davies reported that the Bell System training program emphasizes:

First — The importance of favorable sales attitudes among *all* Business Office people, and

Second — The development of skills in the four steps to the sale — Fact-Finding — Presentation — Answering Objections — and Closing the Sale.

"We have no 'preparation' step, and no 'approach' as it is normally understood in sales procedures," he said. "We do have 'fact-finding' and balance of the normal sales contact — 'presentation' and 'close' and, of course, we always have the problem of 'answering objections' — otherwise there wouldn't be any real sales effort involved!"

Emphasizing that the key to the success of this training program is in the fact-finding and presentation stages, Mr. Davies stated, "Fact-finding on these incoming calls involving service orders is pretty well limited to obtaining the minimum but necessary information for making a package presentation."

"We have found," he added, "that all the information a Service Representative really needs is the number of floors involved, the number of rooms, the customer's occupation and who uses the telephone. This, plus anything extra learned during the conversation and a few basic assumptions, is enough to make a sound recommendation. This method is proving most successful as the results of Business Office selling clearly demonstrate. . . ."

Discussing plant sales, Mr. Davies stated the plant installation and repair forces are in the best positions of all to gain customer confidence.

"Their position is an enviable one," he said, "due to the fact that they aren't really salesmen as such. To the customer they are experienced technicians who are eager to see that the customer gets only what he needs.

"Add to this the fact that due to the very nature of their work they often spend many hours or even days working on the customer's premises. They wisely take time to chat with residence customers to see that the home is completely equipped for adequate telephone service. In the case of a business customer, they are frequently working in close cooperation with key customer personnel. There's no doubt about it — residence or business, the stage is set for excellent additional fact-finding. They are in a beautiful spot to catch last minute changes in the customer's communications planning — to advise him properly on certain aspects of equipment to take care of his needs, or see to it that the salesman is brought back into the contact as needed. . . ."

Pointing out that they welcome any sound recommendations that will increase sales, Mr. Davies said, "They feel selling is an integral part of their job. And this is certainly apparent in the fine job they're doing."

"Selling means more to the installers and repairmen if you call it what it is — giving the customer the kind of service he really should have," he said. "Selling has taken its place along with safety, quality and production in importance in Plant people's thinking today."

Discussing sales activities in the business markets, Mr. Davies reported that "these efforts result in tremendous sums of additional revenue every year throughout the telephone industry in the United States. . . ."

"Throughout the Bell System," he said, "we normally use salesmen who, for all practical purposes, are responsible for meeting the communication requirements of our business customers. They sell everything from simple key telephone plans for a small business, all the way up to the very complex communications that serve the needs of the very largest businesses.

"They sell switchboard and related services, long distance programs, such as the Flowers by Telephone promotion in which many of you participated with us, architects and builders' services — you name it — if it fulfills a communication need, these people probably have it on their shelves. . . ."

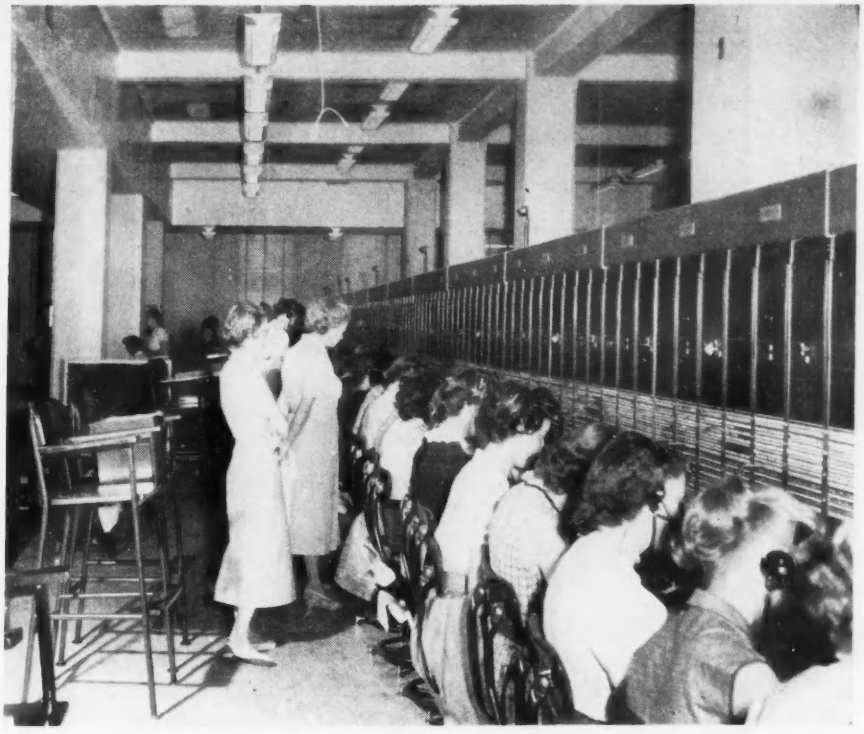
Referring to instructors, sizes of classes, and other matters pertaining to teaching, Mr. Davies recommended: —

(1) Sales instructors must not only know their subject, but they must have the overall ability to teach, and still keep the class awake and interested.

(2) Whenever possible the instructor should have field experience in the particular phase of sales he is teaching. During this period of cutting over from the era of simply meeting customer demand to active selling, it is sometimes difficult to get a man who has both sales experience and teaching ability. In any case the instructor who is assigned to train the group must be thoroughly familiar with the training materials available.

In closing, Mr. Davies warned "there is no panacea in any sales training program."

"Any program," he said, "no matter how well-conceived, requires a lot of thought and effort in preparing it, organizing it and setting it in motion. To be truly effective, such a program must be worked with, revised and refined as conditions change, and as only your own experience can dictate. And lastly, much of the effectiveness of a sales training program — regardless of how successful the training itself may be — can be lost without the day-to-day follow-up and on-the-job coaching by competent, well-trained interested supervisors — so necessary to make the sales training job complete. . . ."



Accountants Look At New Methods

By RICHARD A. REYNOLDS*

Independent telephone industry accountants discuss — (1) Recent Changes In FCC Accounting; (2) Inflation In Business; and (3) Mechanization of The Telephone Accounting Job.

ORA M. WESTRUP, vice president of the Illinois Consolidated Telephone Co., Mattoon, Ill., and chairman of the USITA Accounting Committee presided at the Accounting Conference on October 14.

The meeting, held in the Beverly Room of Chicago's Conrad Hilton Hotel, featured addresses by: USITA Vice President, Foster B. McHenry, Jefferson City, Mo.; Mr. Westrup; Robert E. Armstrong, Federal Communications Commission, Washington, D. C.; Arthur J. Abbott, Arthur Andersen & Co., Chicago; and Robert P. Reuss, American Telephone & Telegraph Co., New York, N. Y.

**Mr. Reynolds is production manager of Telephone Engineer & Management.*

Committee Report

PRESENTING the Accounting Committee Report, Mr. Westrup stated the current year has been characterized by a period of planning and study in order to implement new FCC rules.

Referring to changes in accounting for station equipment accounts effective January 1, 1958, Mr. Westrup summarized the changes as follows:

(A) *Consolidation of Certain Plant Accounts*: — (1) Combine Accounts 232 (Station Installations) and 233 (Drop and Block Wires) into a new account titled Station Connections; (2) transfer small and miscellaneous P.B.X.'s from Account 234 (Private Branch Exchanges) to Accounts 231 (Station Apparatus) and 232 (Station Connections). Retain large dial and multiple manual P.B.X.'s in Account 234; (3) eliminate Account 235 (Booths and Special Fittings); transfer accounts to 231 (Station Apparatus) and 232 (Station Connec-

continuity

One of the achievements of the telephone industry is the way experience and know-how are passed down from generation to generation of telephone people. Not only does this insure steadily good service to the public, but also it perpetuates that *spirit* of service which is shared by telephone people everywhere.

This month magazine readers across the country will find an advertisement called "A Voice of Experience behind the 'Voice with a Smile.' " It's about a supervising operator, her work, her family and her interests. We hope this ad will give readers a better idea of why the telephone industry continues to give the public the finest telephone service in the world. Telephone people are why.

Working together to bring people together
BELL TELEPHONE SYSTEM

PHOTOGRAPH BY ANSEL ADAMS

In the Garden Grove, California, office of Pacific Telephone and Telegraph Company, Supervisor Jean Bullene conducts training and works with her group of operators.

tions) with furniture items going to Account 261 (Furniture and Office Equipment).

(B) *Cradle-To-Grave Accounting for Station Apparatus*: — (1) Charge new Station apparatus to Account 231 (Station Apparatus) at time of acquisition where it will remain for its entire service life. (Prior practice was to charge newly acquired station apparatus to Account 122, Materials and Supplies). It was charged to Account 231 during the time it was installed on a customer's premises and was salvaged to Account 122 on each removal; (2) charge supply expense associated with reused station apparatus to Account 605 (Repairs of Station Equipment).

(C) *Classifications of Station Connections as Depreciable Property*: — (1) Classify new Account 232 (Station Connections) as depreciable property; (2) charge the cost of all work on inward station movement (new installs, reinstalls and reconnects) to new Account 232 and the cost of work on outward movement (removals and disconnections) to Account 171 (Depreciation Reserve); (3) charge Account 171 (Depreciation Reserve) with the investment retired from Account 232 (Station Connections), less the recovered investment reused in the accounting period; (4) abolish the maintenance Account 607 (Station Removals and Changes).

"Some companies," he said, "undoubtedly have elected to make the changes effective January 1, 1957, under the permissive section of the Commission's order. For them it has meant a head start in getting the new methods in operation and an opportunity to capitalize on the savings in clerical work which is expected to follow. . . ."

Referring to the question of whether or not Treasury Department approval will be required if the revised accounting methods are employed in computing net income for Federal income tax purposes, Mr. Westrup stated, "Items under A and B are merely reclassification and refinements which do not constitute changes of accounting method within the meaning of Section 446 (e) of the Internal Revenue Code."

"The treatment of station connections as outlined in paragraph C," he said, "constitutes a change from retirement accounting to depreciation accounting, and it is the adoption of this change for Federal income tax purposes that gives rise to the question. Thus far the Treasury Department has given no indication that it will approve the change in accounting method except upon the request of individual tax payers. The American Telephone & Telegraph Co., and some of the larger Independent telephone companies have done considerable work and have furnished to the Treasury Department certain data in support of their requests. A decision on those requests is now being awaited. . . . Meanwhile, companies making the change would be well advised to request Treasury Department approval in order to avoid possible disallowance of deductions claimed for income tax purposes. . . ."

Stating that the so-called liberalized methods of computing depreciation for income tax purposes which came with enactment of the 1954 Internal Revenue Code are still a matter of important concern to many, Mr. Westrup reported the Federal Communications Commission has issued a notice of proposed rule making with reference to the accounting for income tax differentials arising out of the use of accelerated depreciation. The Association's Accounting Committee responded to a request from the Commission for comments concerning the proposed accounting, and its decision is now being awaited.

"Likewise," he said, "on the subject of depreciation, it should be noted that the Committee has not been unmindful of the effects of inflation and the failure of conventional accounting techniques to measure true costs in terms of present day dollars. Accounting for depreciation on a strict original cost basis has come in for considerable criticism because of this fact. The same is true of other accounts which are likewise affected by the devalued dollar. Nevertheless, there seems to be a fairly general area of agreement on the point that cost is still the best common denominator for accounting proposed, and that it would not be practical to depart from the cost basis as a basic accounting principle.

"This suggests of course that financial results, if they are to reflect inflationary costs, must be supplemented by additional information. While reports employing this feature are still somewhat in the minority, they give rise to some rather interesting questions.

"A desirable result if it could be accomplished would be a change in regulatory practices which would permit an increase in utilities' earnings and possibly a change in tax laws allowing economic depreciation as a tax reduction. On the other hand, there is the question of whether or not a company's credit rating and ability to secure expansion funds might be jeopardized if by reporting economic depreciation it exposes to public view a substantial reduction in its earnings. There are questions which each company will want to consider before adopting any such change in its financial reporting procedure."

Mr. Westrup pointed out that while the proponents of economic depreciation appear to have strong support, general agreement on the subject still appears to be essentially lacking.

"For this reason," he said, "the Accounting Committee has not undertaken to formulate a recommendation other than to continue by educational means its efforts to keep the Independent segment of the telephone industry adequately informed as to the consequences of inflation. . . ."

Recent Changes in FCC Accounting

ROBERT E. STROMBERG, Chief, Office of Accounting Systems, Common Carrier Bureau, Federal Communications Commission, Washington, D. C., explained recent amendments made in FCC accounting rules for Class A and Class B telephone companies relating to the accounting for station equipment together with the associated labor and wiring costs.

"The amendments were mandatory on all Class A and Class B companies subject to the accounting jur-

isdiction of the FCC effective January 1, 1958," he said, "with a proviso that any company that so wished could make the amendments effective as of January 1, 1957. The amended station equipment accounting rules involve a radical departure from long-established accounting procedures and I wish to congratulate those of you who succeeded in putting them into effect in your companies in the relatively short time between the date the amendments were adopted and the beginning of this year. No doubt many of you are still struggling with some of the ramifications encountered."

Reporting that in the course of studies conducted by the industry to determine the feasibility of procedures and field reporting under the new accounting, an additional primary objective to be accomplished was developed, Mr. Stromberg said, this goal, the attainment of which the revised accounting makes possible, was a simplification in field reporting whereby the entire time of an installer is charged on all inward station movements to account 232, "Station connections," and on all station connections not involving inward or outward movements is charged to account 605, "Repairs of station apparatus." Account 607, "Station removals and changes," was deleted. No allocations of time are therefore necessary on any one job.

"As you no doubt are aware," he said, "it was often necessary, under the prior accounting, for an installer to allocate his time (and minor materials used) among two or more accounts. He had to always keep this in mind in filling out his work reports and it made for more involved reporting. I am told that an occupational characteristic of telephone plant men is an aversion to paper work."

Explaining that one of the means used to make possible simplification in reporting was the combining of certain plant accounts, Mr. Stromberg said that Accounts 232, "Station installations," and 233, "Drop and block wires," together with the labor and other installation costs formerly included in account 235, "Booths and special fittings," and in

USITA Accounting Committee Chairman O. M. WESTRUP, Mattoon, Ill., presided at recent Accounting Conference.

that portion of account 234, "Private branch exchanges," relating to small private branch exchanges were combined into new account 232, "Station connections."

The materials portion of account 235, "Booths and special fittings," except furniture items, and of account 234 "Private branch exchanges," relating to small private branch exchanges were included with the old station apparatus account in account 231, "Station apparatus."

"I do not recall who first used the terminology 'simplified station accounting'," he said, "but during the years that this subject was under study, it came into common usage as an easy means of referring to the entire project. On a number of occasions I have heard someone say something to the effect that if this is simplification what in the world would we do if it were complicated.

"As you folks in the industry know, the whole matter of handling station apparatus was, and still is, a complicated matter whether viewed from the standpoint of accounting, field reporting, supply control, or otherwise. However, I honestly believe that a considerable amount of simplification has been made possible by the accounting revisions and that as we all gain experience under the new accounting there may be opportunities for further simplifications or economies by additional revisions in the Rules, or within the framework of the existing Rules. If any of you have any ideas along such lines we are always open to suggestions. . . ."

Mechanization Of Telephone Accounting Job

ROBERT P. REUSS, general accountant, American Telephone & Telegraph Co., New York City, told the Accounting Conference the absence of rapid process in mechanizing the accounting job in the telephone industry is due to the following reasons:

"(1) We do not mechanize our accounting and clerical work for the sake of mechanization alone. Fairly generally we insist that each step that is taken on the mechanization road be 'proved in' on an economic basis.

"(2) We do not accept the principle that as bigger and better machines become available we should look for tasks in our business which can be mechanized with these machines. Instead, we closely analyze the real requirements of our business, simplify these requirements wherever practicable, and then look for data processing equipment which can meet the requirements of our job in the most satisfactory manner.

"(3) We recognize the fact that in order to utilize electronic and electromechanical data processing equipment, we must first put our source data or input documents into a form the machine can understand, sometimes referred to as "machine language." Therefore, we feel that considerable investigation should be made into the problem of *data origination* before going too far in the installation of *data processing* equipment."

Discussing the job of producing a telephone bill for a subscriber, Mr. Reuss reported on what is being done to put the data from which the bills are prepared into machine language.

"The biggest step forward has," he said, "of course, been the automatic recording of telephone messages as a by-product of dial switching. Here telephone companies are in a more fortunate position than

most businesses since the customers actually do our data origination as they dial their calls.

"Automatic message recording systems will be in use in approximately 113 Independent exchanges by the end of the year. Among the interesting plans in the Independent industry is the Western Reserve Telephone Company's system for recording messages on magnetic tape using Stromberg-Carlson equipment. This system has the unique advantage of being able to rate all customer-dialed messages placed through their equipment.

"Also, it transmits information recorded in the local central office to magnetic tape machines in the centralized accounting center. Also of interest is the trial of Federal electronic recording equipment by the Central Virginia Telephone Corporation. This system we understand will record customer dialed calls on a magnetic drum. This information will later be spilled out on 5-channel paper tape for conversion to punched cards and preparation of the toll statement."

Mr. Reuss stated that through the Bell System automatic message accounting system, (AMA), automatic input of information is obtained for message unit as well as toll calls. This system automatically records on a paper tape all details of the call for billing — local office AMA equipment records these details automatically whereas the centralized version. CAMA, records everything but the calling telephone number which is keyed in by a special operator.

Automatic number identification equipment for CAMA is currently under development. By processing the paper tape produced by this system at AMA accounting centers, the elapsed time is computed and the paper tape converted to a punched card for later machine billing utilizing commercially-available tabulating equipment.

At present, a number of Independent companies served by Bell System toll centers are receiving machine prepared toll statements for calls placed by their customers through CAMA equipment. By the end of the year it is planned that about 15 per cent of Bell System toll messages will be recorded by AMA or CAMA.

ROBERT P. REUSS, general accountant, American Telephone & Telegraph Co., New York City.

With new central offices and additional modifications of old ones this should expand to something better than 50 per cent. This should include about 80 per cent of the station-to-station business by 1965.

"The present AMA equipment can only record station-to-station calls," Mr. Reuss said. "To expand it, a trial is planned for next year of a modified version to record customer-dialed person-to-person and collect calls. With this system the customer would dial an additional prefix number to tell the equipment that he wishes to place a person-to-person or collect call. The equipment would signal a special operator who would secure the called person or acceptance of the collect call and then advance the call which would start the timing. All recording (except calling number and class of call) would take place automatically as with other customer-dialed calls. It is planned to use this system in large metropolitan areas like New York where it might be possible to automatically record another 30 per cent or 40 per cent of the total toll traffic."

Pointing out that another part of the message business which is recorded by machine includes the local message and metropolitan area calls which are recorded on message unit registers in older central offices Mr. Reuss stated that many companies are now photographing these registers and key-punching the readings from the photographs.

"In other companies," he said, "an employe in the central office passes the register reading over the telephone to an employe in the Accounting office who records the reading on a 'mark-sense' tabulating card. (On a 'mark sense' card, data is entered by marks made with a graphite pencil. These marks can be sensed by a processing machine which converts them to punched holes.) So far an economical register that can be read directly into a machine has not been developed."

Mr. Reuss stated that despite strides in mechanization of customer dialed calls, a large amount of traffic, principally person-to-person and collect calls, will probably not be mechanized for some time. In order to obtain the data concerning these calls at their original source in a machine readable form, several companies are considering programs for using mark-sense tabulating cards at the switchboard. Mark-sense tickets are already being prepared in some places — the Lorain Telephone Company and Elyria Telephone Company among others. A somewhat similar technique called "mark scanning" has been used for some time in Sweden.

"Under a proposed plan being considered by Bell System companies which goes in a bit farther than most plans heretofore attempted," Mr. Reuss reported, "the traffic operator records in mark-sense form on a tabulating card most of the information pertinent for billing at the time the call is being completed. Other necessary information is recorded in long hand. Cards for completed calls are stored at the switchboard with delayed calls being delivered by messenger to the delayed ticket position. Each day the completed cards are forwarded to the Accounting office.

"In the Accounting office the elapsed time for each call is computed and entered on the card in mark-sense form. The cards are then processed through a reproducing punch with the result that the neces-

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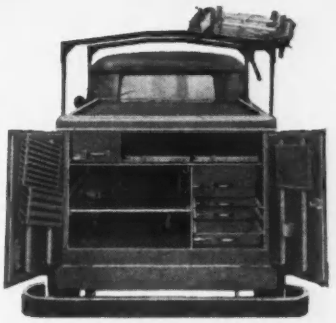

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sary information for rating and billing the call is in punched-card language."

Discussing crediting of payments to customers' accounts, Mr. Reuss stated that under the present punched card billing plan now in effect in many companies, cash payment data are normally key-punched into tabulating cards for later machine processing.

"However," he added, "more promising methods are under trial in certain companies. Under the first of these methods the customer receives a punched card bill form with a payment stub attached. This payment stub contains punched holes indicating the telephone number and the amount of the bill. Customers are requested to detach and present these stubs with their payments. If the customer pays his bill in full the stub is forwarded to the Accounting office and serves as the record for crediting his account. If the customer makes a partial payment, the amount of the payment is mark-sensed on the stub by the business office before forwarding. These stubs in turn are processed through a reproducing punch and a machine-readable document is available for processing. This plan is being used by the Chesapeake & Potomac Company of Virginia and I believe somewhat similar procedures are followed by a number of Independent companies."

Another method, reported by Mr. Reuss and currently employed by the Ohio Bell Telephone Company, involves the use of a paper bill form with a payment stub. Upon receipt of the payment stub in the Accounting office, it is processed through an electronic device which scans the printed character optically and translates the printed entries on the stub into electrical pulses. These pulses in turn activate a card punch producing a tabulating card which contains the information necessary to credit the customers' account.

This machine is known as an Analyzing Reader and has been developed by the Intelligent Machine Research Corporation. Due to the inability of the reader to recognize other than machine printed information, only fully paid accounts are processed in this manner. Partial payments or illegible printing are recognized and rejected by the device for manual key punching.

A third method of obtaining automatic input of customer payment information, which is being tried in the New York Telephone Company, involves the use of a document perforator and reader. Through use of a special punch unit mounted on a tabulating machine, the telephone number, amount of bill, and other pertinent information is perforated into the payment stub in standard 5-channel teletypewriter code as a by-product of the present bill printing operation.

Upon receipt of the payment stub in the Accounting office, the stub is fed through a reader which transfers the punched information into a punched paper tape.

A tape-to-card converter then converts this paper tape into a standard tabulating card. Partial payments are manually key-punched under this method and crediting of payments to the customers' accounts is performed by punched card methods as in the case of the other plans described above. Under this plan, since the basic information is in standard teletypewriter code, automatic transmission of payment data between Accounting and Business offices by teletypewriter is possible.

Referring to service activity, Mr. Reuss stated the necessary details for updating service and equipment records and computing nonrecurring and partial month charges are being key-punched into tabulating cards for later processing.

"In some companies," he said, "service order information is transmitted between departments by standard teletypewriter equipment. Under this arrangement, the original record of data is entered on punched paper tape. By using a tape-to-card converter, a punched card containing service order details may be produced without key-punching."

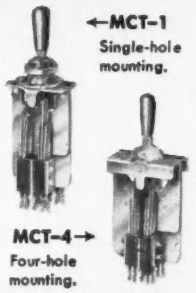
Mr. Reuss stated that from a processing standpoint, billing involves sorting, merging and summarizing of the various input cards for the preparation of toll statements and customers' bills.

"Most telephone companies," he said, "are preparing either punched card bills or paper bills through the use of tabulating equipment. Punched card bills have the advantage of providing automatic input for the crediting of cash payments and under certain circumstances can be prepared with less expensive equipment than required for paper bills. On the other hand, paper bills can be produced more rapidly and may be more economical in large volume operations. Post card bills are also being prepared by a few telephone companies through the use of tabulating equipment. The maintenance of deposit records and coin telephone billing have also been converted to punched card processing.

"By the end of 1957 about 40 per cent of the Bell System customers will receive bills processed by punched card techniques. We understand approximately 30 Independent companies are now using punched card equipment for this purpose. By the end of 1958 it is anticipated that 55 per cent of the Bell System bills will be prepared in this manner. Growth in the Independent field might be expected to be comparable. . . ."

In conclusion, Mr. Reuss stated the rate at which the telephone industry has mechanized the accounting job, while moderate, indicates a sound approach from an economical and organizational standpoint and urged his audience to continue to closely analyze the real accounting requirements of the business before going ahead with mechanization.

"We should give careful attention to the basic form of data origination, (the putting of our source documents into 'machine language'), in any consideration of data processing. The telephone industry will continue to grow both physically and technologically and our accounting procedures should keep up with this development as well as make helpful contributions to this growth. To accomplish this we must be willing to continually examine our paper work objectives and modernize our methods for doing the job . . . . "



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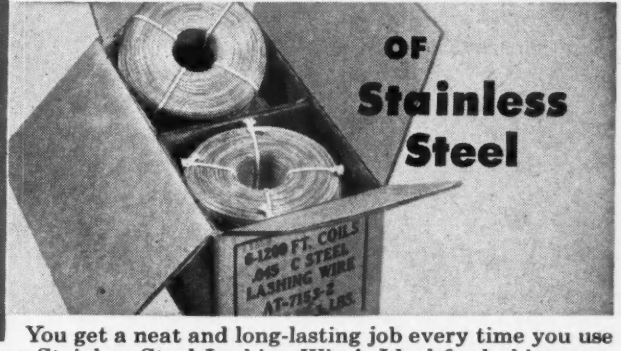

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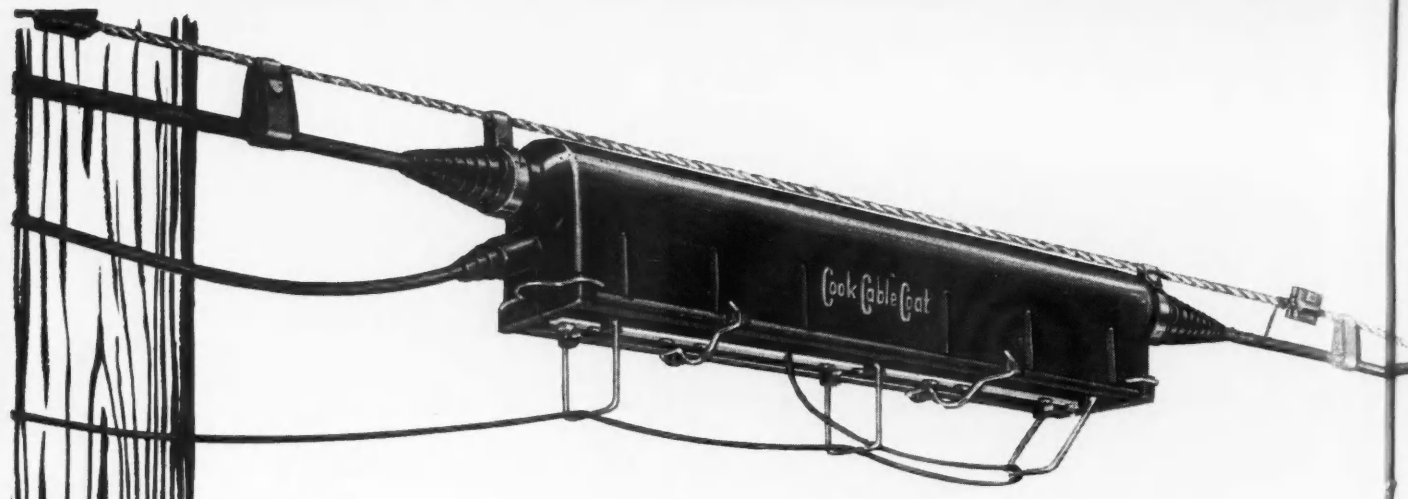

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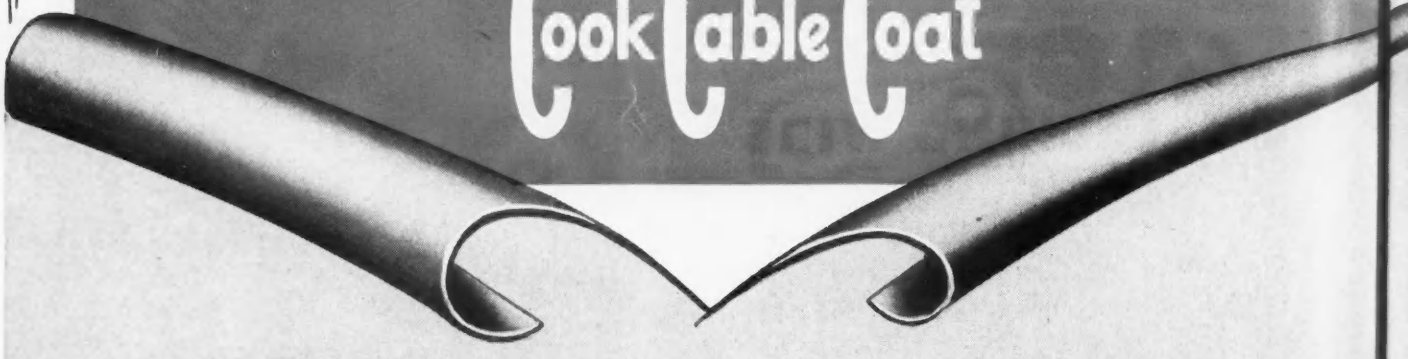

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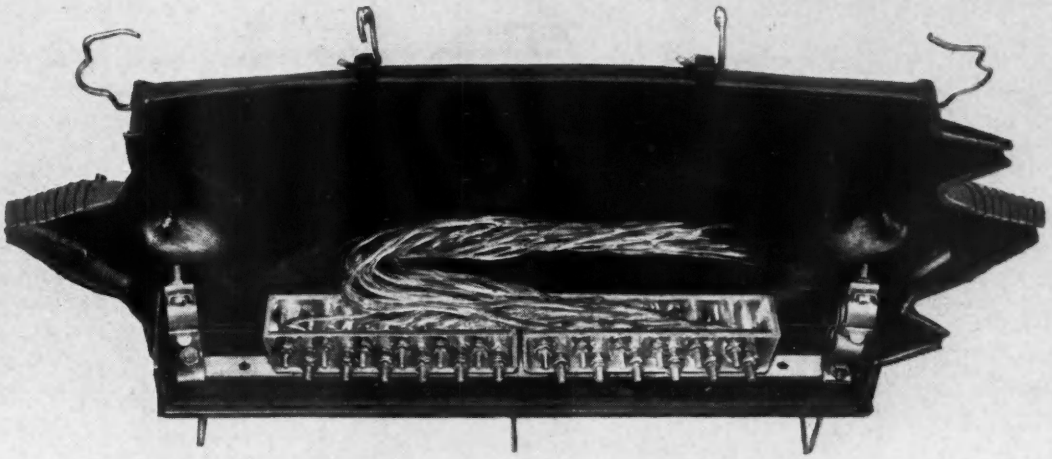

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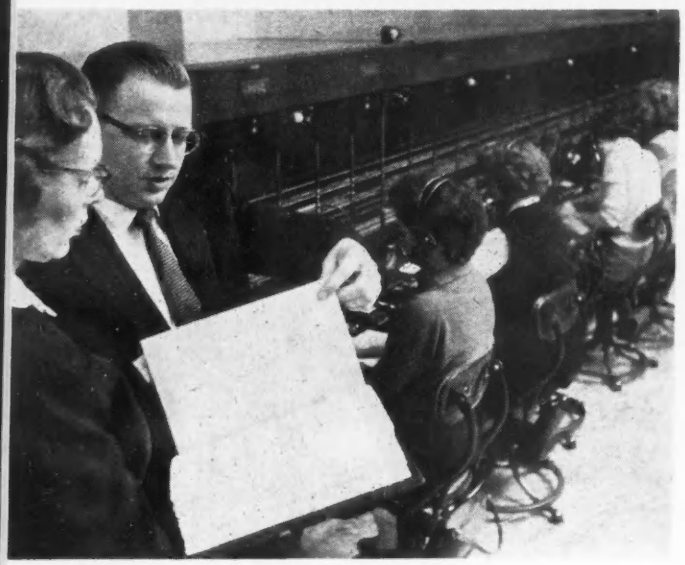

Traffic Looks To The Future

By EMILY BUDDE

USITA Traffic Conference speakers discuss: (1) "Over Sixty In Traffic;" (2) "Are Operators Human;" and (3) "The Bottom Line."

PRESIDING at the USITA Traffic Conference on October 15 in the Beverly Room of the Conrad Hilton Hotel, Chicago, Traffic Committee Chairman Herman Kleinhammer presented speakers, Clive W. Haas, USITA vice president; Lloyd W. Cleveland, Lincoln (Neb.) Telephone & Telegraph Co.; Allan R. Stacey, Sunland-Tujunga Telephone Co., Sunland, Calif.; and W. A. Pitbladdo, Rochester (N. Y.) Telephone Corp.

Presenting the USITA Traffic Committee Report, Chairman Kleinhammer pointed out the responsibility shared by each company, large or small, for the service rendered by the whole system.

"The idea of integration," he said, "suggests the need for uniform methods and standards, more careful long range planning, more universal concurrence on proposed requirements. While the small or large company shares the responsibility of conforming to national requirements, it deserves to share in the formulation of these standards. To this end your U. S. Independent Telephone Association and its 50 or so committees and sub-committees afford a very practical means for the individual companies to share in the development of nationwide objectives."

Reporting that the USITA Traffic Committee has been given the responsibility of considering general problems pertaining to traffic and particularly the improvement and standardization of traffic operations of Independent Companies, Mr. Kleinhammer stated the committee held a meeting in Chicago in June of this year to discuss these propositions and to arrange the 1957 conference.

USITA Traffic Committee Chairman HERMAN KLEINHAMMER, Bristol, Tenn.

"We feel the importance of accepted standards," he said, "not only in traffic operating methods which have even now reached a high degree of uniformity, but in the provision of adequate facilities both within the central office and inter-office trunks. The Traffic Committee stresses the need for having Traffic service objectives for administrative use within the department such as speed of answer, percent irregularities or errors, etc. Where traffic is spending either directly or indirectly one-half or more of a company's annual operating budget it is absolutely essential that the grade of service be controlled so as to be acceptable and attractive commercially, yet within the financial ability of the company. We recognize the need for each company to find a means to measure and evaluate its own service in relation to its objectives and those of the network, and to control its operating cost.

Considering some of the current developments in Toll operating methods, Mr. Kleinhammer reported the new method of handling delayed tickets has gained wide-spread approval.

"Most companies," he said, "have either eliminated or limited voluntary subsequent attempts and thereby discontinued their ordinary TX positions. The success of this plan has been made possible largely through

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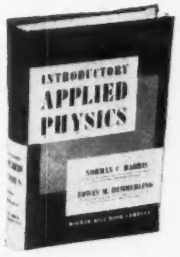

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the good public relations job done by the Commercial Department and the public's acceptance.

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"One word of caution, however. The whole idea is based on trying to make the procedure for placing toll calls comparable to local service, with the goal of Direct Distance Dialing in mind. Where inadequate toll facilities cause a high percentage of calls to be released due to NC and the customer cannot make an attempt and receive a report while on the line, the entire program loses its effectiveness."

Mr. Kleinhammer stated that in connection with billing calls to a third station without verifying acceptance, there are wide-spread differences.

"Some companies," he said, "do and others do not bill to a third station without verification. We would urge a uniform practice and generally favor verification. Along this line the method of handling toll credit card calls has been greatly simplified both from the operator's and customer's viewpoint."

Emphasizing that the most recent change in operating practices is brought about by discontinuing the requirement for "flashing busy" on the toll network, Mr. Kleinhammer said. "This now requires the operator to remain on the line on such calls, until ringing starts or an audible busy or some other audible report is heard."

"This practice," he said, "will in some ways render more personalized service, but also requires more work time. It is conservatively estimated that the additional work time will be .4 units per attempt on station-to-station calls where the operator previously relied on visual supervision. The same additive is necessary on inward attempts where the local office does not return visual supervision. The one compensating factor is that

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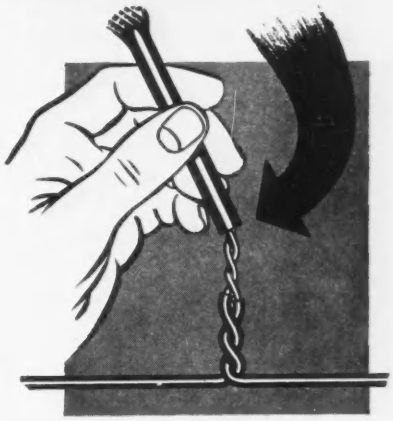

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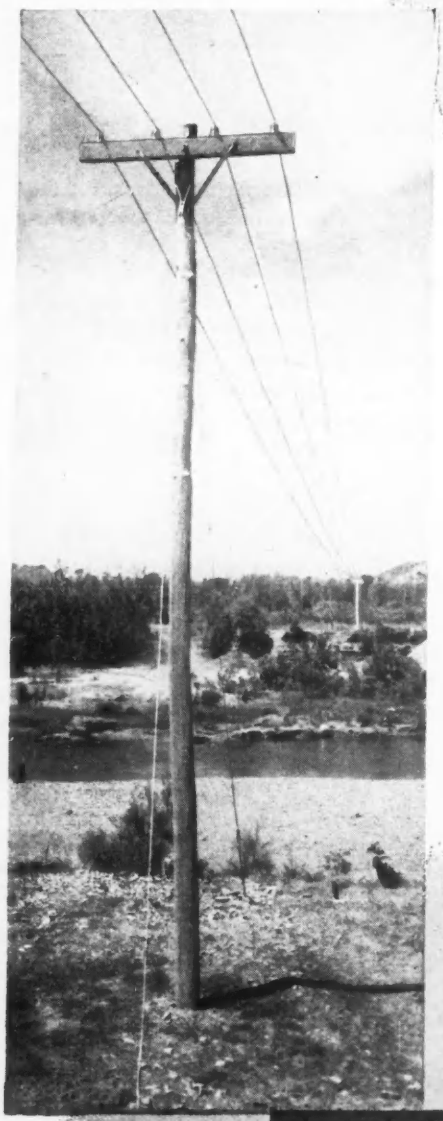

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we will be able to dial into many more points, and with the advent of customer toll dialing the percentage of operator handled station-to-station calls will decrease. . . .

"We have touched briefly on some of the more noteworthy developments, and contemplated our responsibility in the nationwide integrated system. In wishing the Association of our industry many happy and fruitful years ahead on its 60th Birthday, let us remember that wishing alone will not make it so.

"Let us, therefore, pledge our support, share our responsibility, and work together in the spirit of service established by our pioneers."

Are Telephone Operators Human?

TRAFFIC Conference Speaker Allan R. Stacey, of the Sunland-Tujunga Telephone Co., Sunland, Calif., emphasized "Sometimes we become so busy handling the communications of our customers that we forget the very necessary job of communicating within ourselves by letting our operators know what we in management expect of them in the traffic department. All right, how *do* we communicate with our operators?"

"The Chief Operator," he said, "is the 'line of communication' between the traffic department and management and should always be alert to keep the operators informed on current activities of the company. The Chief Operator should, to a great extent, use her own initiative in keeping her operators informed and should not depend entirely upon management or department heads to furnish the necessary information. She should also have contact with the heads of the various departments within our medium sized companies in order to be fully informed herself."

Mr. Stacey suggested: (1) In small or medium size companies it is a good idea for the Chief Operators to have five or 10 minutes daily in conference with management if only for the reason of telling management that everything is going along fine and to learn of the latest events; and; (2) in small and medium size

companies it is wise to have regular supervisory meetings once each week or once each month as might be appropriate in order to inform all supervisors of what the current events are in the company. The Chief Operator should draw from this in order to know what to pass along to her department.

Pointing out that the newly hired employe should be fully informed about employe privileges, he stated that: (1) Each new employe should be given a brief history of the company; and; (2) each individual should, if practical, be given a tour of the premises in which she will work.

"In our company," he said, "it is the practice to put all new female employes in the traffic department for a period of at least two weeks even though they might be hired for work in the business office or in the billing department. The purpose of this is to have each girl realize the importance of the traffic operating department and know what a traffic operator really does. I might suggest that we could carry this even further and where practical put the new applicant for traffic operating work into the business office for a short period of time and perhaps in the billing department in order that she may feel a part of the company at large."

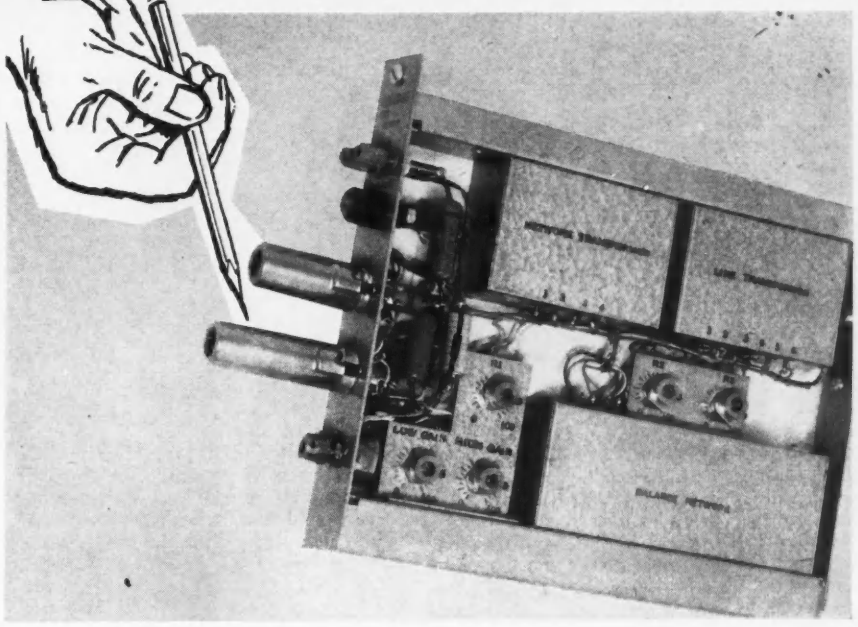
Referring to bulletin and training procedures, Mr. Stacey emphasized the following points: —

(1) Each traffic operator involved in company PBX work should be fully trained communicationwise in order that the very best impression is made upon the public calling into the telephone company office. This would include knowing the names of personnel within the organization, what their jobs are, and being able in an instant to recognize to whom she should route each call when the calling party himself does not know.

(2) This should also include knowing when key personnel are out of town, home ill, or on vacation.

(3) Particular emphasis should be given to bulletins and practices which inform the operator as to what is happening within the company. A good employe is one who is inter-

at 60, KELLOGG points with pride to...



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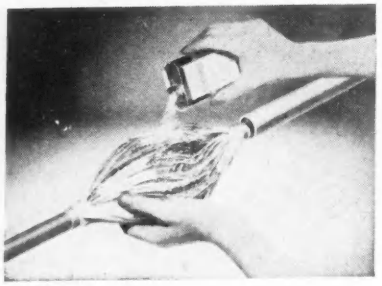
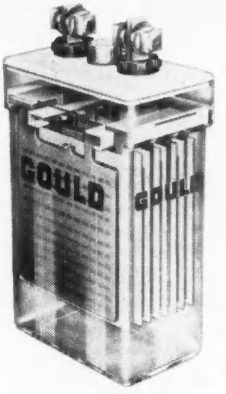
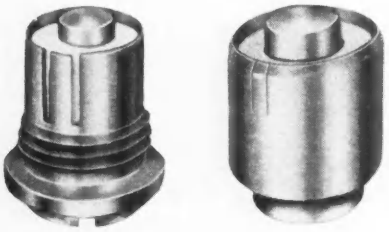


Simple and Effective! The quick, easy, positive way to dry splices in lead-covered cable is to sprinkle Drierite Dessicant granules in among the conductors. This W. A. HAMMOND DRIERITE COMPANY product will not harm the sheath, conductors, or insulation.

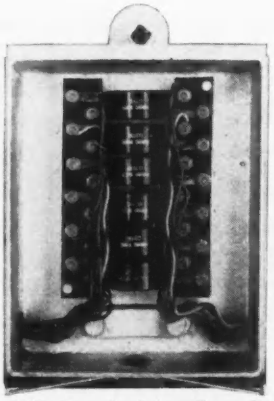
Simple, Quick, and Sure!—For splicing two wires of different sizes, there's nothing simpler than using Nicopress reducing sleeves and the Nicopress 31-DC tool. Splices are always tight and strong. Made by the NATIONAL TELEPHONE SUPPLY COMPANY.



Outstanding Battery Performance is yours when you choose Gould Plante Batteries. Thick, grooved, pure lead positive plates give many years of trouble-free service! Made by GOULD-NATIONAL BATTERIES, INC., the finest money can buy.

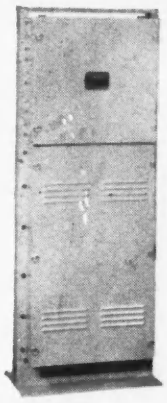


Protectors. The Cook Mytigap is a lightning arrester, surge and power-cross protector all in one, with self-restoring operation after functioning. The Cook Minigap is a high potential arrester for protection of communication lines. Ideal where the characteristics of carbon-to-carbon arresters are desirable. COOK ELECTRIC COMPANY.

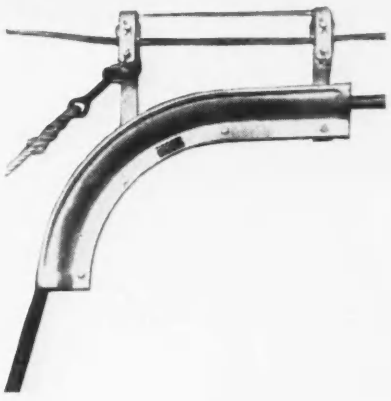


Type 177 Terminal-Loading Case. A cast aluminum combination terminal box and housing for loading coils. For use with the new rural distribution wire for 6, 11 and 16-pair capacity. Available in 8 types. Terminals, available with or without protectors, accommodate loading coils of 88MH or 44MH inductance. COMMUNICATION EQUIPMENT & ENGINEERING CO.

Preformed C Rural Dead-Ends for use on 2#14 and 2#12 Copperweld and 2—.083 Steel C Rural conductors. Made of stainless steel with neoprene coating. No slipping or damage to the conductor insulation. Multiple wire loop gives extra strength. Easy to apply by hand. Simply insert one leg through the eye-bolt and then wrap on the legs. PREFORMED LINE PRODUCTS COMPANY.



H-5 Subcycle for Harmonic Ringing Frequencies. Produces all frequencies in harmonic series, 16⅔, 25, 33⅓, 50 and 66⅔ cycles. Ringing frequencies locked to AC line frequency. Maintenance-free operation. A product of LORAIN PRODUCTS CORPORATION.



Cable Placing Shoe—used for guiding cable in raising the cable from the reel to the strand. Strong but light in weight—made of cast aluminum with steel arms and rollers. Locking pins keep shoe on strand. Made by CABLE SPINNING EQUIPMENT COMPANY.

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"We have it in stock and we'll ship it today." That's the answer that sounds so good when you need line supplies badly. And that's the answer you expect when you call Kellogg for emergency service. Kellogg has the largest inventory of telephone line supplies available . . . and Kellogg trained personnel are ready to give you fast service when you need it.

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ALPHADUCT DROP WIRE carton packaging

saves you time and money

- easier to handle
- easier to inventory
- stacks neatly, saves space
- saves workmen from injury
- prevents wire from being crushed

Once you start using Alphaduct Drop Wire you will find out that the handy carton packaging has real dollars and cents advantages.

Not only does your wire arrive in perfect condition, but the sturdy carton protects it all the while it's in your warehouse.

The cartons are easier to handle than loose coils. They can be stacked higher without danger of falling and the wire on the bottom will not be crushed or bent. Space is saved, inventory taking is simplified, and the possibility of injuries to workers from tumbling coils is removed.

We try to make Alphaduct the finest, longest lasting drop wire money can buy. Quality materials are used throughout, step-testing during every phase of manufacture assures uniform high standards. Alphaduct drop wire is dated with a color coded thread so you can tell for sure how long it lasts.

Try Alphaduct Drop Wire

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ested in all phases of the telephone company and a good employe will want to know about things that affect her personally well in advance of reading these items in the local newspaper or learning from other outside sources.

"In our company," he said, "we believe our operators should have a broad education as well as a specific one. For this reason we have borrowed training films from the nearby Bell System company and in addition have borrowed films of a broader impact describing the aspects of telephone service and communications. We believe that this helped the operator to more fully understand her function and to feel proud of the job that she is doing. . . ."

Discussing the problem of encouraging supervisors to develop themselves, Mr. Stacey referred to the services of Vision, Incorporated, New London, Conn.

"For a stipulated fee," he said, "this organization supplies training material which helps us to teach supervisors to communicate with people. This training material recognizes that 12 percent of a supervisor's success depends upon his technical skill but 88 percent depends upon his ability to communicate with people. From this Vision material we have learned six communication devices. They are: (1) It ain't what you do, it's the way you do it; (2) when dishing out criticism, use a small dish; (3) to persuade become a teacher; (4) become an extrovert; (5) campaign promises are for the birds; and (6) little pitchers with big ears. . . ."

In his concluding remarks, Mr. Stacey urged industry members to: — "(1) Improve yourself. It ain't what you do, it's the way you do it; (2) watch that criticism — use a small dish and big sandwich; (3) become a teacher with strong persuasion; (4) become an extrovert and say 'Whom can I help' rather than 'Who will help me'; (5) remember that campaign promises are for the birds; and (6) listen and see how much you can learn."

"The title of this talk was 'Are Telephone Operators Human?'" he

said. "I believe they are. It is now up to you to prove it by going home and using the communication devices we have been discussing. Good luck to you. May every one of your operators turn out to be a 'living doll'."

Reports on the papers presented by L. W. Cleveland, Lincoln, Neb., and W. A. Pitbladdo, Rochester, N. Y., will appear in future issues of TE&M.

REA Borrower Begins Buried Plant Installation

WORK BEGAN last month on the first extensive installation of buried telephone plant on a borrower's system, the Rural Electrification Administration has announced. The installation is being made by the Northeast Missouri Telephone Co., Greentop, Mo., as part of a general modernization program financed by REA.

The company is burying 296 route miles of wire and cable in rural areas served by its Green City, Winigan and Pollock exchanges. Only 37 miles of the three exchange areas will remain aerial.

Wire and cable being used on the project was developed to meet REA specifications. A new type of terminal is also being used. Experience gained from the construction and operation of this project will provide guidance for other borrowers contemplating underground installation.

General Tel. Announces Organizational Changes

SEVERAL organizational changes within General Telephone System have been announced in New York City by General Telephone's President, Donald C. Power.

Carl J. Lohman, who is currently personnel director for General Telephone Co. of Ill., will be transferred to General Telephone Service Corp. in New York City as safety director, effective November 1. Lohman previously worked in the commercial department and the plant department of General Telephone Co. of Ill. prior to his appointment as personnel director for that company. In his new assignment as safety director. Lohman will be a member of the Operations Department, reporting to W. G. Wright, vice president — Operations.

James L. Malone, who is currently

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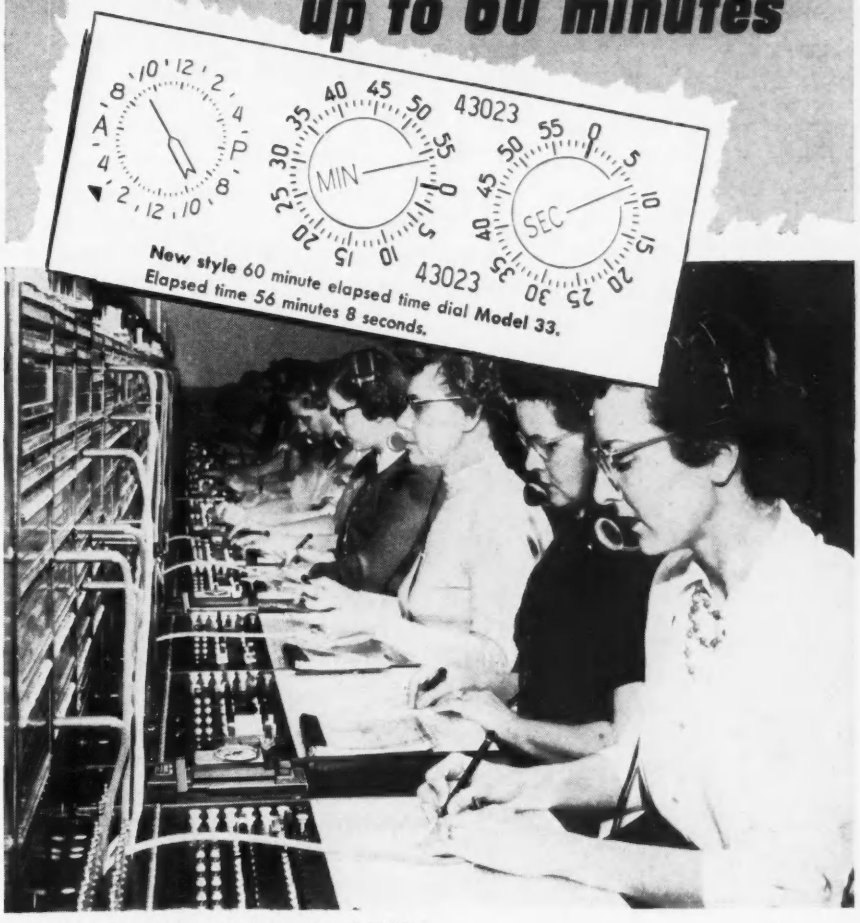


New style 60 minute elapsed time dial Model 33. Elapsed time 56 minutes 8 seconds.

Photo Courtesy of General Telephone Co. of Michigan

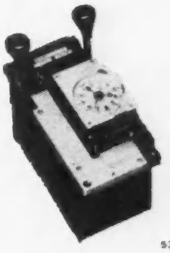
Now, Calculagraph, the modern dependable computer, automatically figures and prints toll calls up to 60 minutes —no need to add 30 minutes on long conversations.

Thus, Calculagraph adds one more feature to reduce human errors by busy operators and increases the volume of calls handled per operator. Assures you of all revenue due on every call.

For accurate toll call records, for automatic computation of elapsed time, for more efficient operation, install the new 60-minute elapsed time Calculagraph on your switchboard.

Information on this new Calculagraph is yours upon request.

Write today for illustrated brochure to Dept. TM



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construction and maintenance DIGEST

- **Weather-scoffer**
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- **25-year battery**
- **Profitable noise**
- **Wires' Shangri-la**

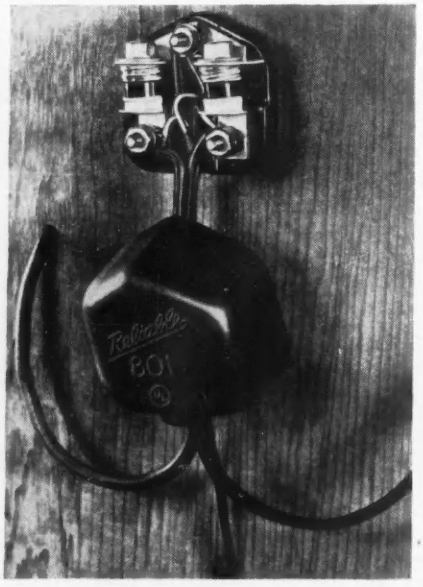
Published regularly to help you get the most out of your materials and supplies dollar

by Joseph W. Mullin, Inside Sales—Kansas City

My pet hobby is photography. Maybe you've noticed yourself—a double exposure can be mighty interesting. For instance, when you order supplies from Stromberg-Carlson you see **two** big benefits in the picture. One, you get fine products with a two-fold guarantee—ours and the maker's. The guarantee is backed by our 62-year reputation. And here's the other. Your support gives the science of telephony a push forward. As you know, this industry is a full-time job with us. Your supply orders help us continue research for new and better telephone equipment. So we say a heartfelt "thanks"—it's a pleasure to serve your supply needs.

Long life under all conditions

You get long service life under all kinds of weather conditions with the Series 800 Fuseless Protector, recently developed by Reliable Electric Company.



Easy to install and maintain

This new protector is available with Reliable No. 504 Protector Units (as No. 801) for station protection and with Reliable No. 506 Protector Units (as No. 801A) for cable protection.

The weather-tight neoprene cover has passed the Underwriters Laboratories severe requirements for performance and weathering under temperature extremes. The protector is listed under UL Re-examination Service.

The neoprene cover fits snugly and drops out of the way conveniently when protector is installed or serviced.

Puts up a howl, gets misplaced receivers back on the hook

Here's how to tell a subscriber to replace his receiver on the hook—without wasteful service calls.

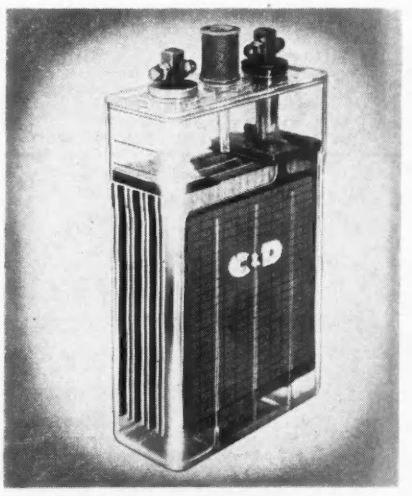
Lorain Model B Howler makes itself heard!

This Model B Howler, made by Lorain Products Corporation, keeps party lines clear. It produces a distinctive signal tone that demands instant attention. The signal is loud, but safe.

The Lorain Model B Howler is equipped with subscriber-controlled relay for fully automatic operation.

Battery will live 25 years

A quarter of a century is the expectancy of an extra-life battery made by C & D Batteries, Inc. In full-float service, their PlastiCal (lead calcium grids) battery will serve your power needs faithfully—often well beyond its 25-year expectancy.



It'll be 1982 before you even have to *think* about replacing this extra-life C & D battery, if you install it now!

C & D Batteries' PlastiCell (high tensile, special alloy grids) battery offers reliable power supply at lower cost, with a life expectancy of 14 years.

Noise can be money!

Take a business subscriber who has a telephone in some extremely noisy location—and who has finally decided to do something about it. Would you rather have him spend money in building a soundproofed booth—or give **you** the money as monthly income on a telephone which completely licks the noise problem?

The GAI-PHONE is such an instrument. It has a special transmitter that actually creates a "Zone of Quiet" around the handset—even in a spot as noisy as a boiler factory! It costs the subscriber **less** than a

booth—and you get the revenue!
Ask us for complete details.

Here's a drop wire that hides its age

Samples of Whitney Blake Teleprene® (neoprene jacketed) drop wires were strung where they would get lots of weather. After nine years, they still looked fresh and undaunted – and tests showed that these wires would give years and years **more** of good service!

The jacket is a tire-tread type neoprene compound which provides excellent resistance to sunlight, abrasion, oils, acid fumes, alkalies and other corrosive chemicals.

Conductors have Teleplate coating: lead, to resist corrosion, and brass plating over the lead, to provide enduring adherence of the high quality buna rubber insulation to the conductor.

Available in parallel (shown here), twin parallel and twisted pair types.

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personnel administrator at General Telephone Service Corp., was transferred to General Telephone Co. of Ill. as personnel director, effective October 16. Since joining General Telephone System, Malone has had assignments as personnel director at Indiana, and wage and salary administrator for General Telephone Service Corp. In his new assignment, Malone will be located at the Illinois company's general office.

Gordon Orelli, presently equipment maintenance engineer, senior supervising, at General Telephone Co. of Calif., was transferred to General Telephone Service Corp. as electronic and development engineer, effective October 16. In his new assignment, Orelli will be a member of the Operations Department and will report to Frank D. Reese, engineering director.

Raymond Sheehan, who is currently division manager of San Joaquin division of General Telephone Co. of Calif., will be transferred to General Telephone Co. of the Southeast as vice president and division manager for South Carolina, effective November 1. Sheehan's headquarters for his new assignment will be at Sumter, S. C.

McKrae Tel. Exchanges Transferred to United

KANSAS Corporation Commission has authorized the transfer of 13 southeast Kansas exchanges owned by McKrae Telephone Co. to United Telephone Co., Abilene, Kans.

KCC Chief Engineer, Lloyd Shank said United would charge the same rates when it takes over the 13 exchanges. They are located at Altamont, Altoona, Benedict, Burlington, Coyville, Fall River, Fredonia, LaFontaine, Neosho Falls, Piqua, Toronto and Quincy.

United will issue $600,000 in bonds and $392,200 in common stock to retire McKrae's current indebtedness.

How To Plan Your New Exchange Bldg.

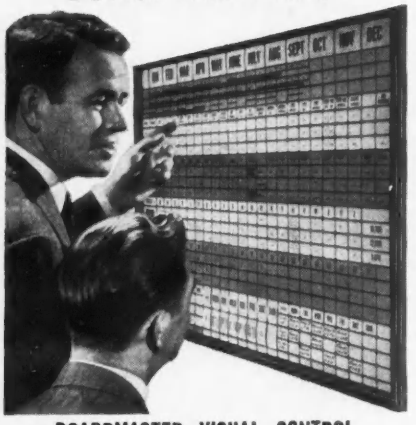
A NEW Package Plan for obtaining architect's drawings and complete building specifications for the typical dial telephone office at a fraction of the usual cost has been announced by Stromberg-Carlson.

The plan was developed in answer to many requests from the small-to-medium size Independents (200-800 lines) for assistance in their building program. Utmost flexibility in design is the basic feature: exteriors in traditional or contemporary style to fit the local scene; floor plans for different equipment capacities, with or without offices; in all, 28 different combinations.

Specifications are drawn with particular emphasis on materials generally available in all parts of the coun-

SHOWN IS a contemporary style building, one of seven elevations available. Flexibility allows elevation design to be used also on the long side of the building. This is one of the buildings described in new Stromberg-Carlson booklet.

How To Get Things Done Better And Faster



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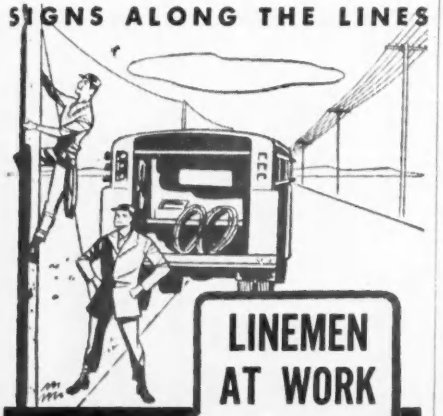

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USING Crapo GALVANIZED GUY & MESSENGER STRAND

Positive strength and durability economies, combined with the superior qualities of steel, make *Crapo* Galvanized Steel Strand a rugged performer. The heavy, ductile, tightly-adherent galvanized coating — applied by the famous *Crapo* Process — provides dependable protection for the steel, prolongs the expectant life of the strand. There is a size and grade of *Crapo* Galvanized Strand for every practical need.

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Muncie, Indiana

try. Electrical and hardware accessory lists show equivalent part numbers for different manufacturers. Designs meet requirements for economical, totally fireproof construction. Heating and air conditioning specifications are covered according to the building plan selected.

An illustrated brochure describing the plan in more detail is available from George Forbes, Publication Manager, Telecommunication Division, Stromberg-Carlson, Rochester 3, N. Y.

Oley Draves Purchases Brookville (Kans.) Tel. Co.

MRS. MAMIE BRADLEY SMITH, after more than 40 years in the telephone business, has sold the Brookville (Kans.) Telephone Co., to Mr. and Mrs. Oley Draves, Moffat, Colo.

She has owned the telephone firm for 27 years.

When a doctor recently told Mrs. Smith that she must retire because of a heart condition, she got busy and sold the company. She will continue to live in Brookville.

Her husband was killed in a railroad-truck collision 11 years ago. After her husband died, Mrs. Smith did much of the outside work as well as handling the switchboard. Until three years ago she could climb a pole as well as any lineman.

The exchange has between 135 and 140 customers.

Mr. and Mrs. Leon Hopper, formerly of Wichita, Kans., are operating the Brookville exchange for the new owners who also own the telephone company at Moffat, Colo. The Draves plan to modernize and rebuild much of the Brookville company's facilities.

S. W. Bell Takes Over Sycamore, Kans. Subscribers

KANSAS Corporation Commission has authorized Sycamore (Kans.) Telephone Co. to discontinue business and Southwestern Bell to take over the estimated 90 customers through its Neodesha and Independence changes.

The Kansas Commission also granted rate increases amounting to $4,170 to Haviland Telephone Co. and $5,300 annually to Consolidated Telephone Co., Burrton.

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CONTACT BURNISHER
FOR USE ON ANY TYPE CONTACT

- No residue.
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Frank R. S. Kaplan Dies; Death Ends Active Career

FRANK R. S. KAPLAN, prominent businessman, attorney and civic leader, died last month in his home in Squirrel Hill, Pittsburgh, Pa. He was 71 years of age.

Kaplan was chairman of the board and chief executive officer of the

FRANK R. S. KAPLAN

Copperweld Steel Co. He was one of the founders of the company in 1915, and had been chairman of the board since 1955.

Widely known for his distinguished contributions in civic and philanthropic circles as well as in the business world, Kaplan was well beloved by all with whom he was associated. His was a typical American success story, and never did he lose his essential modesty and understanding of human problems.

Kaplan was associated with Copperweld since its inception in 1915, and today the company has four major divisions with plants at Warren, Ohio; Shelby, Ohio; Glassport, Pennsylvania; and Oswego, New York. His initiative and organizing ability helped develop the business into a major American industry. He served the company as secretary and treasurer, general counsel, vice president and was elected president in 1949.

He is survived by his widow, Madeline Roth Kaplan, his three children, Irving M. J. Kaplan, Lois Kaplan Finkel, Margery Kaplan Auerbach, and seven grandchildren — also four sisters.

One Call assures Prompt Service on all your Pole Line Hardware needs

For nearly 85 years, Woodings-Verona has manufactured top-quality products for leading industries throughout the nation. To meet expanding requirements of users of pole line materials and hand tools, Woodings-Verona now offers a dependable source of supply for all your needs. Long manufacturing experience, thorough research on pole line hardware, and carefully-controlled manufacturing methods and application testing have resulted in quality products.

Your orders at Woodings-Verona receive careful attention and prompt service. A few of the available products are listed below:

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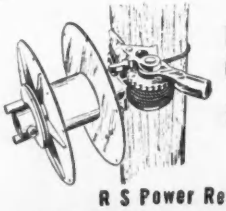
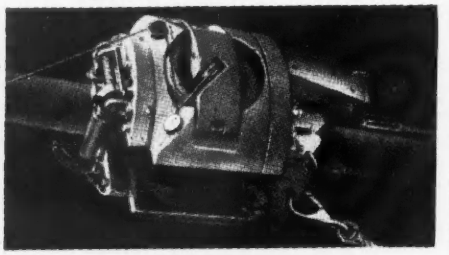
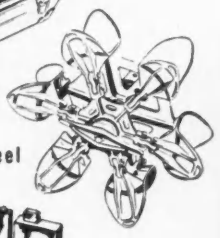
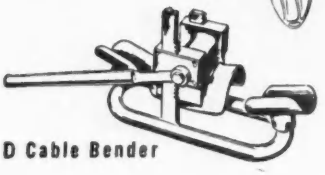
Cable Blocks
Cable Lashers
Coaxial Cable Tools
Lashing Wire Clamps and Grips
Portable & Power Reels

Pressure Testing Kit


R S Power Reel




C R Power Reel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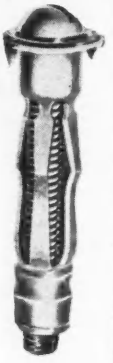
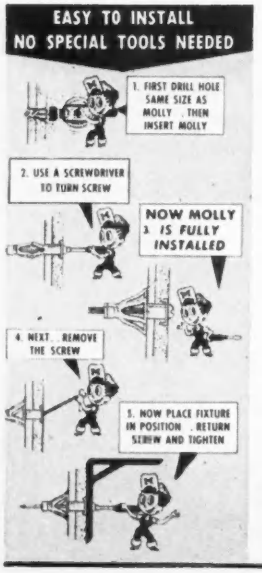
Join the SWITCH from Toggle Bolts to MOLLY



Molly screw anchors are making toggle bolts obsolete. Company tests have proved Mollys seven ways better for attaching station apparatus and wiring to walls of hollow construction. So join the switch to Molly screw anchors and enjoy these advantages: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2. USE A SCREWDRIVER TO TURN SCREW
NOW MOLLY IS FULLY INSTALLED
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5. NOW PLACE FIXTURE IN POSITION . RETURN SCREW AND TIGHTEN

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J. K. O'Shaughnessy Retires From REA

J. K. O'SHAUGHNESSY, assistant telephone administrator, Rural Electrification Administration, retired on September 27 after 20 years with the agency.

He joined the REA staff as a field engineer in 1937. In 1946 he was made chief of REA's Engineering Division, and for the next seven years was in charge of the engineering and construction program for getting electricity to America's farms. This involved more than $1.5 billion in loan funds which REA borrowers used to reach 2.5 million rural consumers.

In June 1953 he was named chief of REA's Telephone Engineering Division, and in September of that year was appointed assistant administrator in charge of REA's telephone program.

In 1954, he was presented the Department of Agriculture's Distinguished Service Award. The citation was made for "outstanding service to agriculture and rural life by making electric service available to many additional farms, through significant economies in constructing rural electric lines," and for "outstanding skill in public administration."

The detailed description of Mr. O'Shaughnessy's achievement which nominated him for the award cited his part in holding down construction costs in the rural electric field.

O'Shaughnessy was born in New Orleans, Louisiana, in September 1887 and was graduated from the University of Louisiana with a degree in electrical engineering. He is married and has two grown children.

Dumont Names Fockler To Engineering Post

W. G. FOCKLER has been named manager of technical products engineering at Allen B. Du Mont Laboratories, Inc. He succeeds Arthur J. Talamini, who recently resigned the post to join Electro Tec in South Hackensack, N. J.

Prior to the new appointment, Fockler was assistant engineering manager of the Technical Products Division. In his new post he is responsible for engineering programs for cathode-ray oscilloscopes and as-

sociated electronic test equipment, automotive test equipment, industrial television, and two-way mobile radio communications.

He joined the pioneer electronic firm in 1945 after receiving a bachelor's degree in Electrical Engineering from the University of West Virginia. During his twelve year association with Du Mont he has been part of the engineering team for instruments and technical products.

Warren Mfg. Announces Personnel Assignments

C. H. ACHENBACH, retired head of the power plant development department of the Bell Telephone Laboratories, has been retained by the Warren Manufacturing Co. of Littleton, Mass.

Achenbach will serve as engineering consultant in the design and manufacture of rectifier power supplies for battery charging, battery eliminators, and transistor ringing generators for use with selective ringing operations. It was further indicated that William R. Meyer will be retained in a sales and service capacity for this equipment. Meyer is well known in the Independent telephone industry, and is a principal in Commercial Electric Co.

Achenbach has been associated with the Bell Telephone Co. since his graduation from the University of Arkansas in 1913. In 1920 he joined the Development Division of the Western Electric Co. in N. Y., predecessor of the Bell Telephone Laboratories. In 1931 he transferred from equipment engineering to the Power Plant Development assuming the duties of head of the department in 1944 and serving in that capacity until his retirement in 1953.

Raytheon Promotes Alpert and Sedik

EDWARD Alpert and Joseph J. Sedik have been advanced to new positions in a recent reorganization of the Communications Marketing Department of the Raytheon Manufacturing Company's Commercial Equipment Division.

Alpert, formerly assistant product planning manager, has been promoted

Please turn to page 70

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(*Concluded from page 67*)

to communications field sales administrator. He will be in charge of sales planning and marketing administration for Raytheon microwave television relays and message circuit communications equipment. Alpert will also head the communications staff sales engineering group.

Sedik, formerly chief communications systems engineer, has been promoted to communications product planning manager. He will direct the planning of new communications products and markets. He will also be responsible for the overall coordination of the communications product line, including engineering, manufacturing, and marketing.

IT&T Appoints Dominguez Executive Engineer

JOSE D. Dominguez, president of Puerto Rico Telephone Co., San Juan, Puerto Rico has been appointed executive engineer for the telephone and radio operating department of International Tel. & Tel. Corp., New York City, it was announced by Edmond H. Leavey, president of IT&T. The telephone company in Puerto Rico is one of the 11 radio and telephone operating companies in the IT&T System.

Succeeding Dominguez is Clyde E. Dickey, now traffic superintendent for Telefonos de Mexico, S. A.

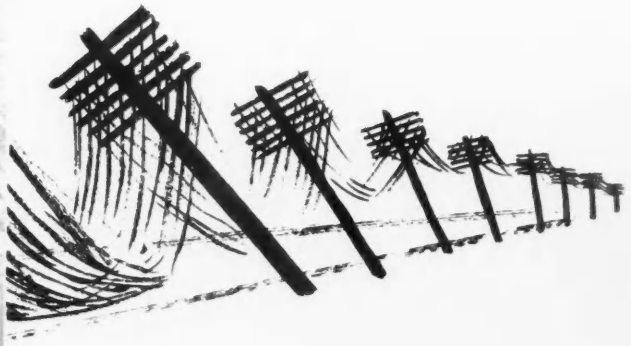
Dominguez was born in San Juan, Puerto Rico, and graduated from Massachusetts Institute of Technology in 1927. While there, one of his instructors was the then Captain Leavey of the United States Army who, after his Army career was completed with permanent rank of Major General, was to become president of IT&T. Dominguez has been with IT&T for the past thirty years in various capacities, having become president of the Puerto Rico Telephone Co. in January, 1956, during the largest expansion program in the company's history. Also, during Mr. Dominguez' term of office, the company became one of the first in Puerto Rico to be listed on the American Stock Exchange, as part of the program necessary to finance expansion of the Island's telephone network.

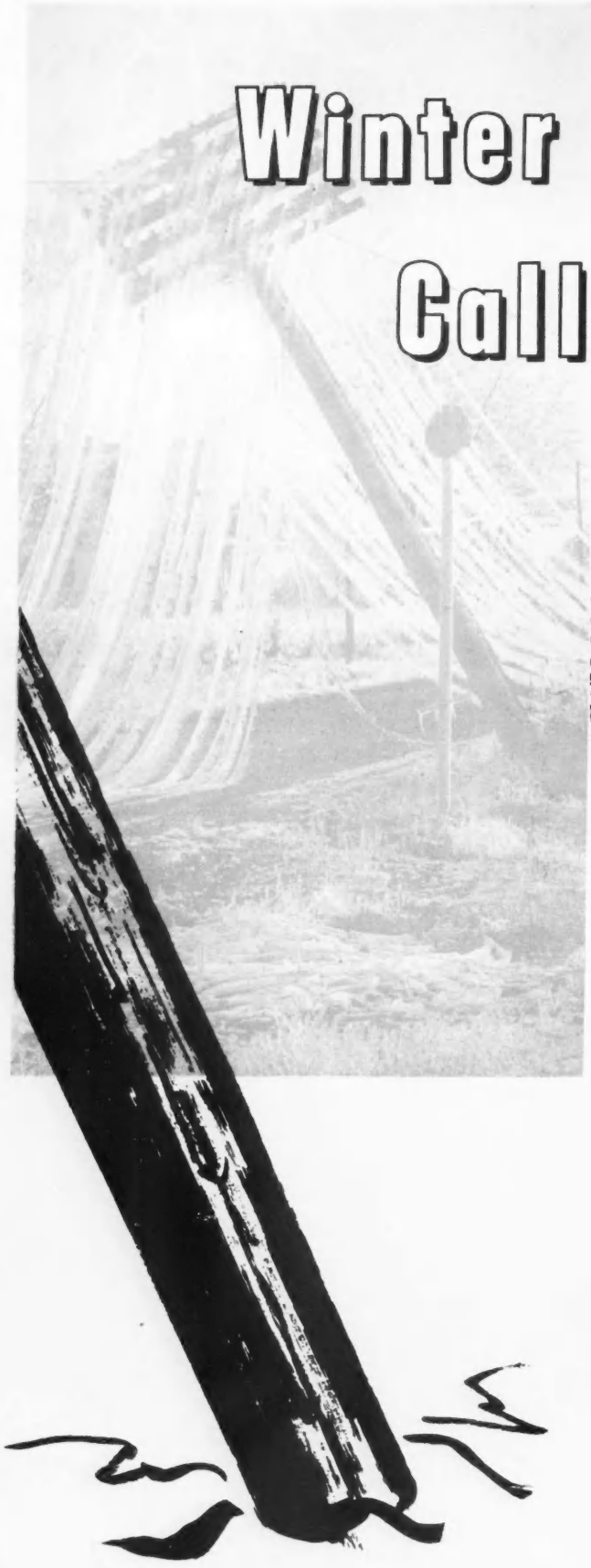
AUTOMATIC ELECTRIC TOPICS

NOVEMBER 1957
VOLUME 22
NO. 5

Be Sure You're Set for the Winter Storm Season. Automatic Electric's Supply Service Can Help You.
(See next page.)

Winter Emergencies Call for FAST



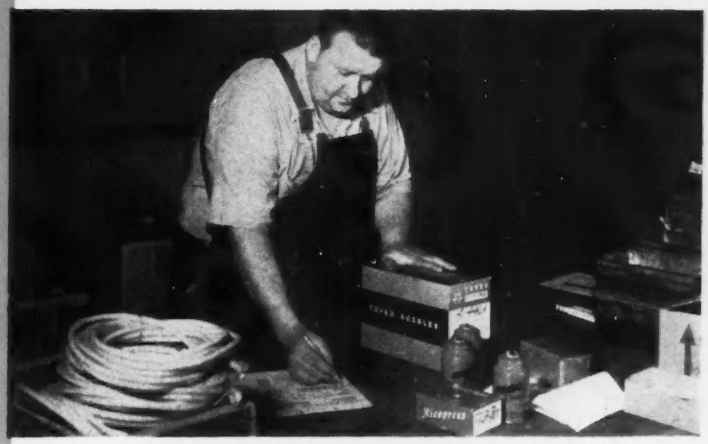


In the waning days of last winter, a midwestern telephone company found itself smack up against a shortage of tools and supplies. They needed more than 300 items —and in a hurry! They immediately called their nearest Automatic Electric warehouse, and got prompt action. In fact, the order was shipped within five hours!

With the new winter storm season approaching, emergency situations are bound to crop up. You can help guard against winter emergencies by checking your warehouse stocks now, and ordering those items which are in short supply. We'll give you 24-hour service from stock at any of our five friendly warehouses.

If you *do* happen to get caught short in an emergency, however, remember that we can give you even faster service—just as we did in the case mentioned above. And this is how we'll do it.

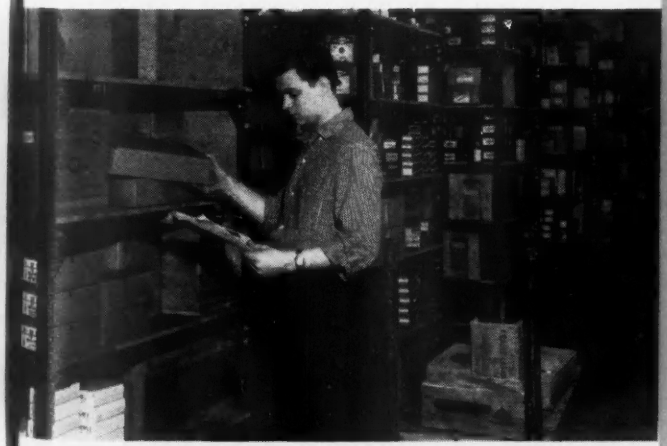
ACTION



3. *All orders are filled with top-quality material. The customer gets exactly what he wants from the hundreds of famous, dependable brands on hand. The whole shipment is re-checked as it leaves the stock room, just to be sure.*

A customer's emergency order is given an immediate check by warehouse personnel. Each item is properly described, and identified by catalog number. To guard against delay, order copies are sent ahead to alert others.

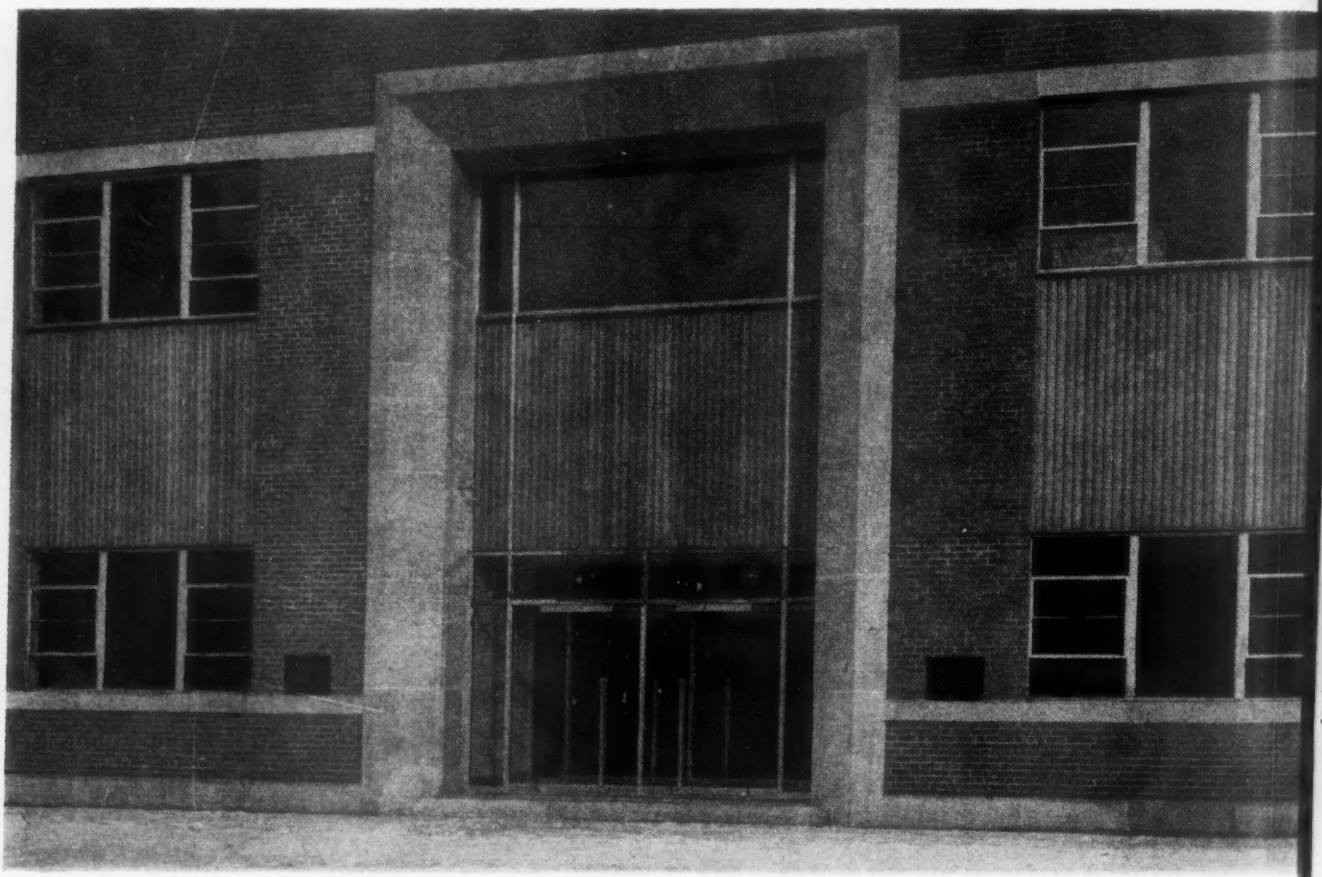
4. *Safe arrival at the customer's plant is just as important as rapid delivery. Orders are packed with care—packed for protection. Again, the entire shipment is checked against the packing slip to be sure everything is included.*



2. *Large stocks are on hand in Automatic's warehouses, so usually everything for the customer's rush order will be picked right from the shelves. Each item is inspected to be sure it is complete, ready for immediate use on delivery.*

5. *As quickly as possible, the order is loaded and on its way by rail or truck—or by air, if you wish. Whatever you order from Automatic, we'll always do our best to get it to you in good condition, and in the shortest possible time.*

There's a "NEW LOOK" in Elyria, Ohio



Elyria Telephone Company's new building in Elyria, Ohio, is modern all the way through.

Just a long stone's throw from Lake Erie and a little farther than that west of Cleveland is Elyria, Ohio—the kind of town where you'd like to live. It's a bright, active community with upwards of 30,000 people. And once you get to know them, you'll find they are friendly, co-operative people. They are intensely civic-minded and are always finding ways to make their good community a better one.

One of the brightest spots in the area is the new building of the Elyria Telephone Company. It's modern inside as well as outside. There's background music for the pleasure of both employees and customers. Doors are hydraulically operated, and open at a touch. The building is equipped with a "heat pump"—a single unit which provides both air conditioning in summer and heat in winter, through electric power.

Everett H. Krueger, Jr., Chairman of the Public Utilities Commission of Ohio, broadcasts his impressions of the new Elyria telephone system and congratulates the people of Elyria on the improved service to the city. Arthur Vogel, Manager of radio station WEOL, conducts the interview. Weldon W. Case, Company President and General Manager, stands by.

It's a busy toll board in Elyria. Operators handle toll calls at 25 positions. The new Elyria office comprises 5,110 lines and 12,000 terminals of Strowger Automatic.

Directing the Elyria cutover from a desk full of telephones is Joseph J. Hornyak, Jr., Equipment Superintendent for the Elyria Company.

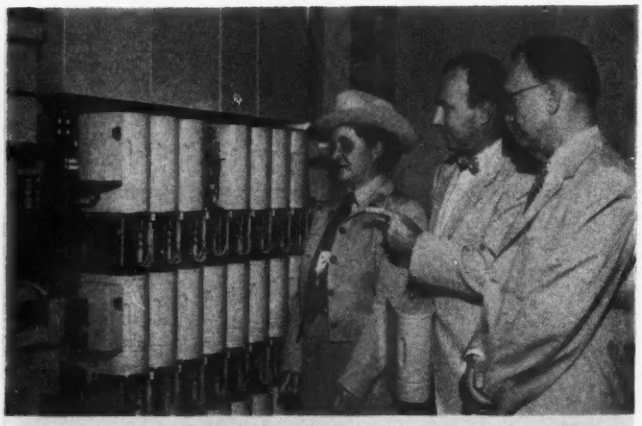
The big item in the building, of course, is the new telephone switchboard and switching apparatus. Recently cut over were 5,110 lines and 12,000 terminals of Strowger Automatic equipment and a 25-position toll board. This replaced a Strowger exchange first installed in 1919 —and still going strong at the time of the cutover. Growth in service—both local and toll—necessitated the replacement of the 38-year-old system, and the move to the new building.

The new Elyria office is toll center for a number of the Company's other exchanges. When Elyria joined in the "2-5" numbering plan with its cutover, these other offices had been modified and were converted to "2-5" dialing at the same time. Trunks have also been increased to the Bell toll center at Cleveland.

The Elyria Telephone Company, having now provided for expansion in all of its offices, is in a position to grow just as fast as the area grows. The system now serves more than 21,000 subscribers.

Established in 1897, Elyria Telephone Company's latest "new look" began with the naming of Weldon C. Case as Vice President and General Manager early in 1956. His ability, foresight and friendly manner earned him the Presidency of the firm in February of this year. A youthful 36, Mr. Case began his telephone career as a lineman during his college days.

Hawaii MATCHES Beauty WITH Progress



Among the first visitors to the new Strowger Automatic exchange at Kamuela, T. H., were Mrs. Anna Perry-Fiske and Leo Lycurgus (right). S. K. Smiddy, Hawaiian Telephone Company manager on the island of Hawaii, shows them how step-by-step switches operate. Mrs. Perry-Fiske is owner-manager of Anna Ranch, one of several large cattle ranches near Kamuela. Mr. Lycurgus is a Public Utilities Commissioner.

KAMUELA, T. H. (Special)—The visitor comes to the Hawaiian Islands with visions of leis and luaus, beautiful beaches, and far-reaching fields of sugar cane and pineapples. And these he finds, of course. But, no matter what he's heard, the visitor always finds something new as well. For the Islands hold many other attractions.

Here in the Waimea Plateau region of the "Big Island" of Hawaii, for instance, is the second largest cattle ranch in the world. This is rich range country, with ranches stretching out for miles around the community of Kamuela.

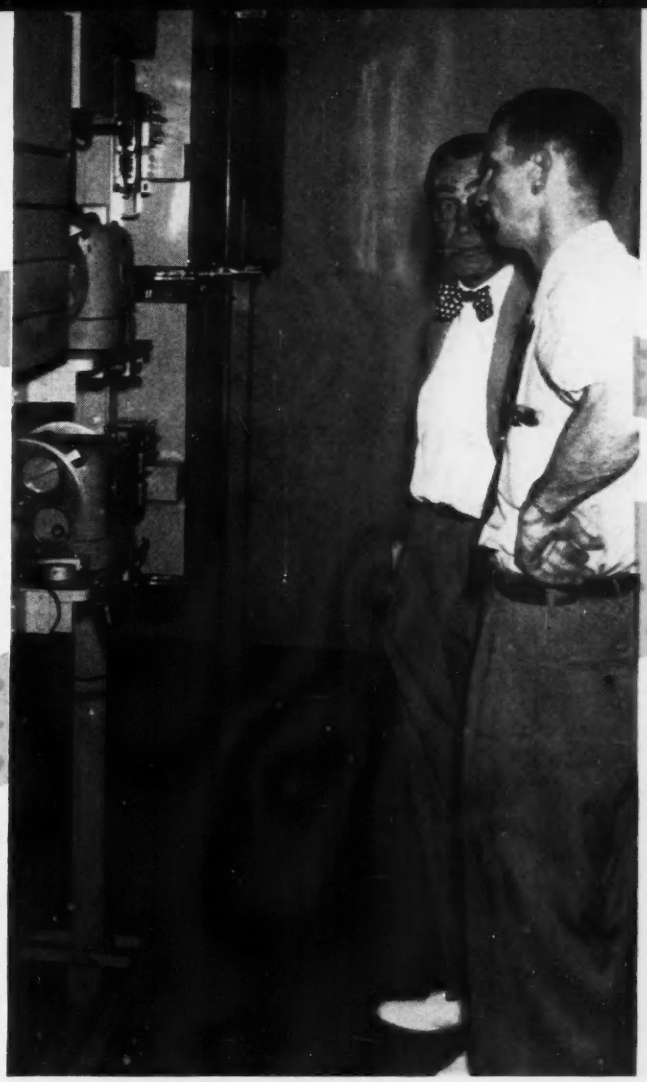
In Kamuela itself there are also modern signs of progress—as is the case throughout the Islands. Just recently the telephone exchange here became the last of the Hawaiian Telephone Company's territory-wide system to be converted from manual to Strowger Automatic.

There's quite a history behind this 100% conversion to dial operation in the Islands. In fact, history of the telephone in Hawaii reaches almost as far back as Bell's invention itself. Only three years after the inventor first managed to transmit speech sounds over a wire in 1875, the first telephones were installed in the Territory. The Hawaiian Company also pioneered in the adoption of Strowger Automatic, with an installation as long ago as 1910.

The firm now known as the Hawaiian Telephone Company was chartered in 1883 by King Kalakaua, then monarch of the Islands. In 1898 Hawaii was annexed as a Territory by the United States, and 12 years later installed one of the early Strowger dial exchanges. The Hawaiian Company, known as Mutual Telephone prior to 1954, has kept pace with the swift economic growth of the Territory and, at the same time, has consistently worked toward complete modernization of its far-flung facilities. That's how it happens that the Company's complete dial system is now *solid* Strowger.

Since World War Two it has more than trebled its number of telephones in service, and now operates more than 160,000 stations. In addition to the Company's heavy volume of inter-island and local traffic, its operators last year handled more than 205,000 trans-Pacific calls. This traffic is now expected to increase with the completion of the $37 million trans-Pacific submarine telephone cable which is a joint AT&T-Hawaiian Telephone Company project.

More Than Half a Million Stations Now Served by SATT



One of the more recent SATT cutovers was this installation in Ellensburg, Washington, where Type D SATT—calling for operator identification of the subscriber's number—serves the Ellensburg Telephone Company. Provision is made for the addition of Type B SATT—in which both *calling and called number are automatically identified—at a later date. R. E. Rudolph (left), President of the Ellensburg Telephone Company, and Howard Yetter, Plant Superintendent, inspect a part of the "workings" of SATT.*

FROM time to time we have told you about cutovers to Strowger Automatic Toll Ticketing. But lately we've been wondering whether these occasional stories really pointed up the tremendous growth SATT has enjoyed among the Independents.

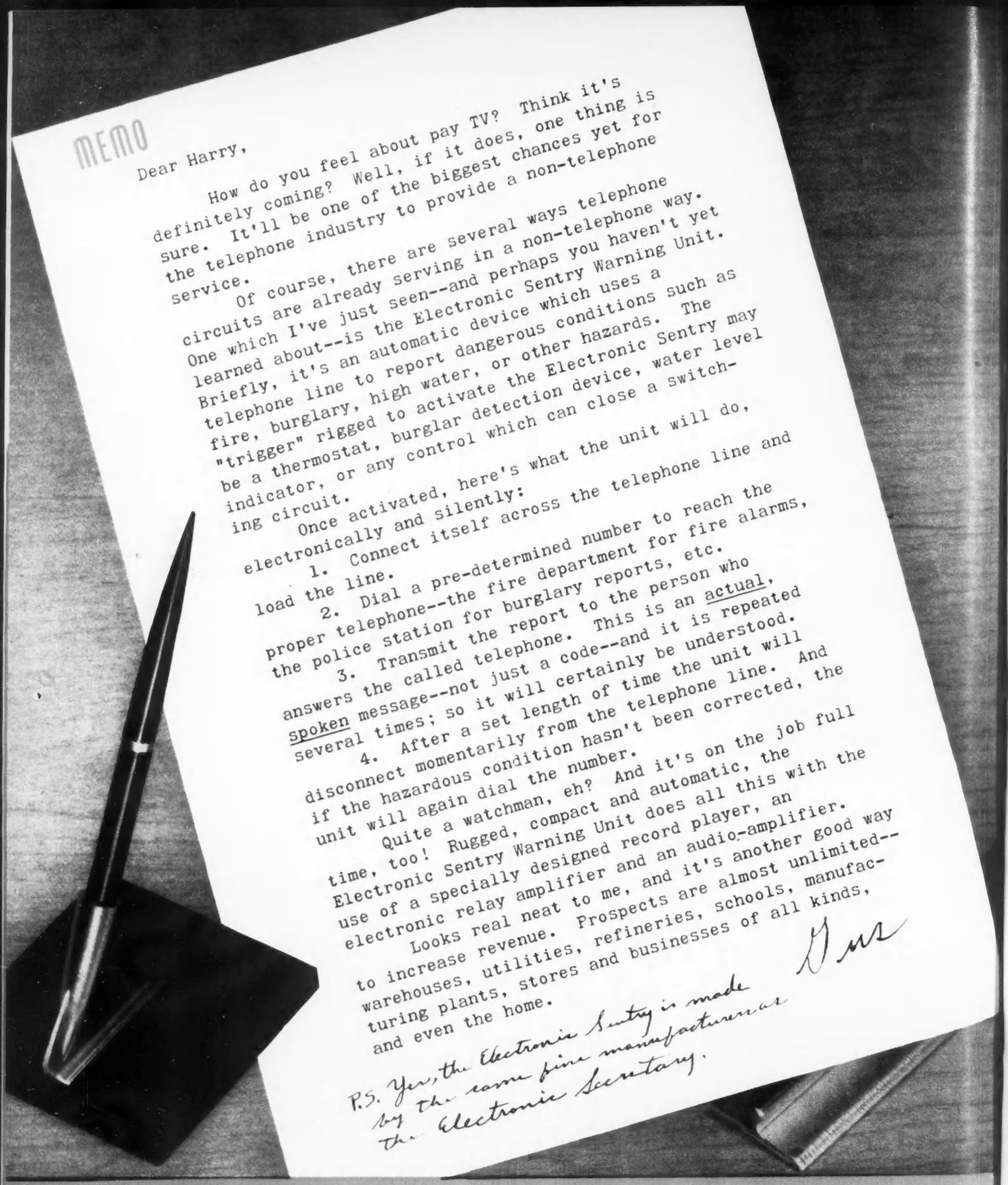
How much is *tremendous* growth? Plenty!

A recent survey among Independent telephone companies who are operating SATT equipment reveals that well over 500,000 stations now have access to this equipment. And each month SATT is completing the records on about 5,500,000 toll calls. This is an increase of approximately 100,000 stations and 1,500,000 toll calls per month over the figures of only a year ago. And more than 20 additional SATT installations are scheduled to be in operation by mid-1958.

Companies with SATT equipment have found that such improvement of service stimulates use of toll facilities and results in increased net revenue. Appreciable savings in operating costs are made not only in switching calls, but in compiling call data, calculating charges, and billing customers as well—because SATT handles all this automatically!

Ask anyone who has SATT. He'll tell you that customers like to dial their own calls. They like the quick completion of calls, and the privacy it affords. Business customers, especially, also like to be able to time their own calls and to make successive ones without waiting for operators to disconnect a previous call.

An interesting fact about these SATT installations is that they are being made in exchanges of almost all sizes. On the basis of this actual experience, we feel perfectly safe in saying that no matter what size your company may be, there is a SATT system to fit your needs—exactly!


MEMO
Dear Harry,
How do you feel about pay TV? Think it's definitely coming? Well, if it does, one thing is sure. It'll be one of the biggest chances yet for the telephone industry to provide a non-telephone service.
Of course, there are several ways telephone circuits are already serving in a non-telephone way. One which I've just seen--and perhaps you haven't yet learned about--is the Electronic Sentry Warning Unit. Briefly, it's an automatic device which uses a telephone line to report dangerous conditions such as fire, burglary, high water, or other hazards. The "trigger" rigged to activate the Electronic Sentry may be a thermostat, burglar detection device, water level indicator, or any control which can close a switching circuit.
Once activated, here's what the unit will do, electronically and silently:
1. Connect itself across the telephone line and load the line.
2. Dial a pre-determined number to reach the proper telephone--the fire department for fire alarms, the police station for burglary reports, etc.
3. Transmit the report to the person who answers the called telephone. This is an actual, spoken message--not just a code--and it is repeated several times; so it will certainly be understood.
4. After a set length of time the unit will disconnect momentarily from the telephone line. And if the hazardous condition hasn't been corrected, the unit will again dial the number.
Quite a watchman, eh? And it's on the job full time, too! Rugged, compact and automatic, the Electronic Sentry Warning Unit does all this with the use of a specially designed record player, an electronic relay amplifier and an audio-amplifier.
Looks real neat to me, and it's another good way to increase revenue. Prospects are almost unlimited--warehouses, utilities, refineries, schools, manufacturing plants, stores and businesses of all kinds, and even the home.
Gus
P.S. Yes, the Electronic Sentry is made by the same fine manufacturer as the Electronic Secretary.

Published by

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One of America's great communications systems

GENERAL TELEPHONE SYSTEM

Northlake, Illinois

John Sharkey, *Editor*

Advertisers & their Agencies

Telephone Engineer & Management, November 1, 1957

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THE BACK OF THE BOOK

By JOHN G. REYNOLDS

Their Wires Crossed

DICK JOHNSTON and Joe Fisher, *Register-Republic* staffers, have had their telephone wires crossed for months without knowing it, and it took their wives to straighten things out the Rockford, Ill., newspaper has reported. Both families were assigned the same two-party line, but neither one knew about it. For days, Mrs. Eleanor Fisher attempted to call Mrs. Joan Johnston only to get a "busy" signal. In despair, Mrs. Fisher finally padded two blocks down the street to the Johnstons and after a quick skull session put in a call to a telephone supervisor . . . That settled the big mystery. Like it says on page 2 of the phone directory "To call one of the other people on your party line a code number is needed." So far, Johnston and Fisher say they still are unable to memorize the code number.

Phone Firm Gives Up On Squirrels

THE ILLINOIS Bell Telephone Co. admitted last month that its biggest headache isn't delinquent bill payers — it's squirrels.

Prompted by the routing of one of its cable splicers the other day by an irate mother squirrel, the utility decided to disclose its long secret report on the results of six years of study on the relationship of squirrels and telephone companies.

A highly skilled team of graduate students at the University of Massachusetts delved into the reasons why squirrels like to nibble on the lead sheathing of telephone cables.

Some of their theories are really something:

(1) Pregnant squirrels have a craving for the taste of lead just as some human mothers-to-be crave red apples at 2 a.m.

(2) Squirrels, like lead because of its salty content. A dietary deficiency, said the researchers.

Well, these were pretty good theories, thought the telephone men, so they tried various combative measures.

Large blocks of salt were placed atop the 35 foot tall poles. In a way, the scientists were correct. The squirrels enjoyed the free salt immensely as an appetizer before a hearty meal of lead sheathing.

As for the pregnancy theory, learned engineers just shook their heads and admitted they had no control over such things.

The telephone people tried a few other things, but with little success.

They placed metal shields around poles and cables where squirrels were numerous. The squirrels just went where there were no shields. Then the engineers coated cable with asphalt paint and sand and glass beads. But, the squirrels just gnawed a little harder.

Well, those researchers went back and thought some more. And, finally, they had an answer. Pretty simple, too.

It seems that sqiurrels eat lead sheathing simply because they like it. There isn't much you can do about it.

"DOC 1234"

PEOPLE living in the West End of London, England, can be assured of getting a doctor at any time of day or night by dialing "DOC 1234."

West End doctors subscribe to a service that maintains a telephone headquarters and a fleet of cars equipped with two-way radios and manned by licensed doctors. A call to "DOC 1234" usually brings a physician within a few minutes if the family doctor cannot be reached. After treatment the emergency physician prepares a report of the case which is forwarded to the family doctor. The charge for this service is the same as that charged by the family doctor.

CAUSE AND EFFECT

dead-ends tailored for jacketed conductors

Preformed Dead-Ends grip firmly, yet jacketing material won't creep

There is only one way to efficiently dead-end self-supporting cable, C-rural wire and B-rural messenger: Apply Preformed Dead-Ends over the jacket.

Preformed Dead-Ends are precisely designed and fabricated to hold firmly, but low unit pressure prevents undue creepage or cold flow. In addition, for many applications they have a neoprene coating that cushions the grip yet relieves and distributes stresses.

Preformed Dead-Ends will hold the maximum service loads of the conductor or messenger without damaging the jacket. When the jacket is weatherproofing, as on B-rural messenger, you get full protection by not exposing the conductor to the elements at any point.

For more information about dead-ending weatherproofed and insulated conductor and messenger, write PREFORMED LINE PRODUCTS COMPANY, 5349 St. Clair Avenue, Cleveland 3, Ohio. Cable Address: Preformed-Cleveland . . . in 10 years the leading manufacturer of armor rods, dead-ends, Guy-Grip dead-ends, and other line accessories.

PLP

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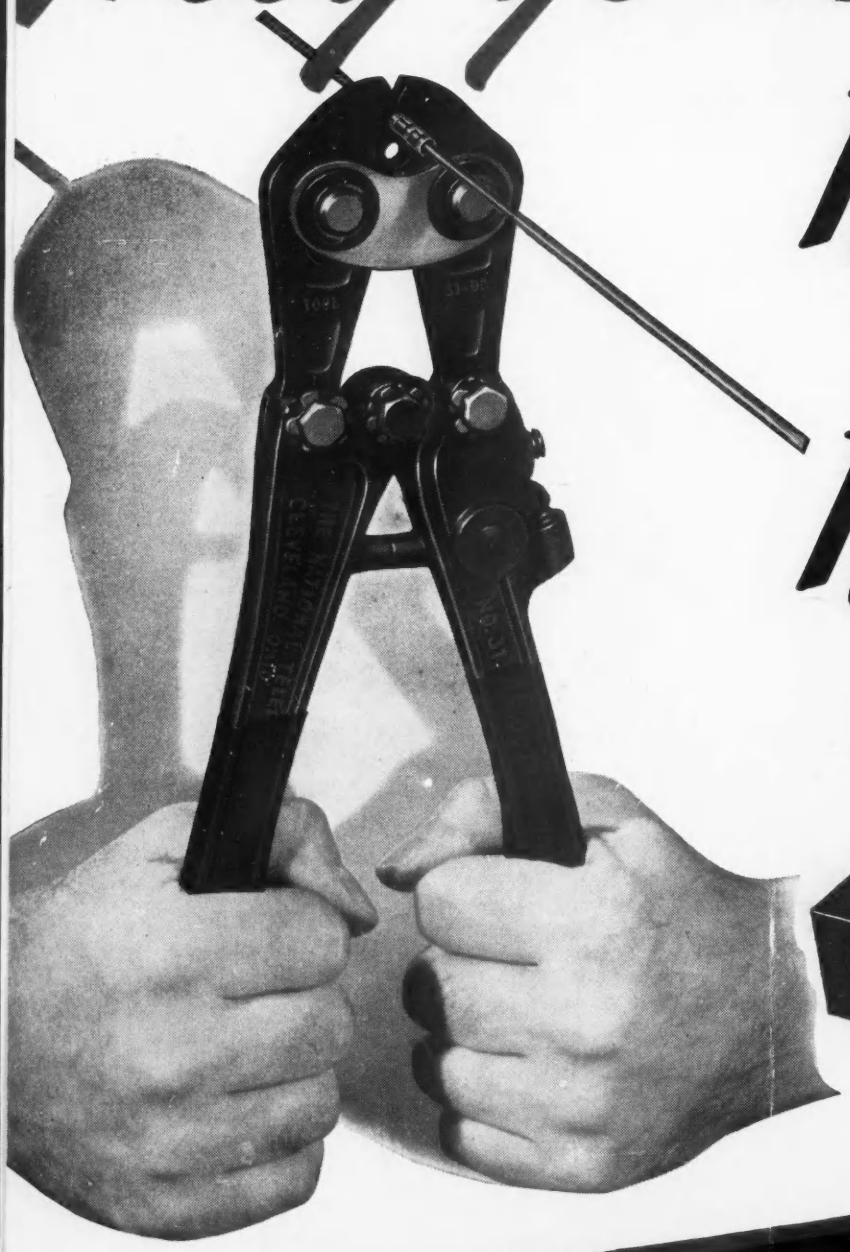

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